CGIAR

RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security

CCAFS

Outcomes of CCAFS Work in the Philippines

Outcomes of CCAFS Work in the Philippines

January 2020

Correct citation: CCAFS SEA. 2020. Outcomes of CCAFS Work in the Philippines. Hanoi, Vietnam: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Available online at: www.ccafs.cgiar.org

This work was implemented as part of the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), which is carried out with support from CGIAR Fund Donors and through bilateral funding agreements. For details please visit https://ccafs.cgiar.org/donors. The views expressed in this document cannot be taken to reflect the official opinions of these organisations.

Special thanks to: **Dr. Alice Joan G. Ferrer**, Dean of the College of Arts and Sciences, University of the Philippines Visayas, for the technical assistance during the conduct of this study.

ABSTRACT

With a number of activities in the Philippines, an outcome assessment of CCAFS work in the country was conducted. The goal of the study is to see how the CCAFS SEA outputs contributed to the agriculture-related policies and programs implemented by the Philippine government. Looking at the development outcomes in the agriculture sector of the Philippines, this paper identified, described, verified, and analyzed changes with respect to climate change-related knowledge, attitude, capacity, policy or practice of the CCAFS SEA stakeholders in the country.

Although Philippines is not a priority country of CCAFS, there is still a lot of significant works done in the country, producing a range of outcomes. Outcomes were observed among policymakers and key staff working in agricultural development related agencies and among farmers. The set of interventions, together with the resulting outcomes, clearly illustrates how CCAFS provided a holistic approach in promoting CSA in the Philippines - from policy review and development up to program planning and implementation.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

AMIA	Adaptation and Mitigation Initiative in Agriculture
ASEAN-CRN	ASEAN Climate Resilience Network
ATI	Agriculture Training Institute
BAR	Bureau of Agricultural Research
CCAFS	CGIAR Research Program on Climate Change Agriculture and Food Security
CCAFS SEA	CGIAR Research Program on Climate Change Agriculture and Food Security in Southeast Asia
CGIAR	Consultative Group on International Agricultural Research
CIAT	International Center for Tropical Agriculture
CIP	International Potato Center
CRAO	Climate-Resilient Agriculture Office
CRVA	Climate Risk Vulnerability Assessment
CSA	climate-smart agriculture
CSA T&Ps	climate-smart agriculture technologies and practices
CS-MAP	Climate Risk Mapping and Adaptation Planning
CSV	Climate-Smart Village
DA	Department of Agriculture
DA RFO2	DA Regional Field Office 2
DepEd	Department of Education
ENSO	El Niño-Southern Oscillation
FP	Flagship Program
GSI	Gender and Social Inclusion
IFPRI	International Food Policy Research Institute
IRRI	International Rice Research Center
LGU	local government unit
NEDA	National Economic and Development Authority
NGO	non-governmental organization
PAJ	Philippine Agricultural Journalists

PhilRice	Philippine Rice Research Institute
PHP	Philippine Peso
QR	Quantitative Restriction
R4D	research for development
RCEF	Rice Competitiveness Enhancement Fund
RTL	Rice Tariffication Law
SAAD	DA-Special Area for Agricultural Development
SEA	Southeast Asia
SEARCA	Southeast Asian Regional Center for Graduate Study and Research in Agriculture
SOA	school-on-the-air
SOA-CSA	School-on-the-Air on Climate-Smart Agriculture
SOA-SRA	School-on-the-Air on Smart Rice Agriculture
SWCCO	Systems-wide Climate Change Office
TecVoc	Technical-Vocational
USD	US Dollar

INTRODUCTION

The Philippines is highly vulnerable to climate change and natural disasters. According to the 15th Edition of the Global Climate Risk Index (Germanwatch 2019), the country ranked second in the list of most affected by climate change in 2018 and the fourth among the long-term climate-impacted countries (from 1999-2018). Due to its geographical location, the Philippines is regularly exposed to tropical cyclones, including the strongest ones recorded in recent years, such as Bopha in 2012, Hayan in 2013, and Mangkhut in 2018. With its high vulnerability to climate change and natural disasters, the country's agricultural sector and food systems are at risk. For instance, an average of 20 typhoons per year pass the Philippines, a few of which specifically damage crops, livestock, and other properties.

Agriculture is a highly significant sector of the Philippine economy. It contributes approximately 12% of the country's gross domestic product and employs around 32% of the economically active population (Dikitanan et al. 2017). More than half of the population living in rural areas and are highly dependent on agriculture and agriculture-related industries. However, due to several challenges, the Philippine agriculture remains to be underdeveloped and unable to meet the food requirements of the growing population. Some of these problems are: low agricultural productivity, limited financial mechanisms, stiff market competition, poor market access and information services, and low investments on agricultural research (Sebastian 2019). Climate change impacts, like sea level rise, drought, flooding, typhoons, and climate variability, have made these challenges more insurmountable for the agriculture sector, especially for smallholder farmers.

To help the region, particularly the government and smallholder farmers, cope with the impacts of climate change in agriculture, the CGIAR Research Program on Climate Change Agriculture and Food Security (CCAFS) was launched in Southeast Asia (SEA) in 2013. Led by the International Center for Tropical Agriculture (CIAT), CCAFS brings together the world's best agricultural scientists and climate experts to study and address the interactions, synergies, and

trade-offs among climate change, agriculture, and food security. The CCAFS SEA office was established in Hanoi and is being hosted by the International Rice Research Center (IRRI) Vietnam country office.

Even though Philippines is not one of the priority countries, CCAFS SEA conducted activities in the country (from 2014-2020) to generate evidence and support for the adoption of climate-smart agriculture (CSA) policies, practices, and services that will help in improving livelihoods and supporting sustainable landscapes. CCAFS SEA promoted CSA technologies and practices that can be applied at the farm level, with the goal of increasing the Filipino smallholder farmers' agriculture productivity, and at the same time, resilience to climate change impacts.

CCAFS SEA worked with the key agriculture and development agencies of the Philippine government. In the past six years, CCAFS primarily collaborated with the Department of Agriculture (DA) and its attached agencies, such as: Bureau of Agricultural Research (DA-BAR); Agriculture Training Institute (ATI); Philippine Rice Research Institute (PhilRice), and the Systems-wide Climate Change Office (SWCCO). Through various projects, CCAFS SEA also work with other major government offices, such as the National Economic and Development Authority (NEDA) and the Department of Education (DepEd). CCAFS SEA worked a lot with media organizations in the country, such as the Philippine Federation of Rural Broadcasters (PFRB), Philippine Network of Environmental Journalists, and Philippine Agricultural Journalists (PAJ). Moreover, CCAFS SEA was able to work with local partners, like the DA Regional Field Office 2 (DA RFO2) in Cagayan Region, Local Government Units (LGU) of Guinayangan in Quezon Province and of Ivisan in Capiz Province.

In the Philippines, CCAFS SEA served as a platform for collaboration among the CGIAR centers located and/or with projects in the country, such as CIAT, IRRI, International Potato Center (CIP), and International Food Policy Research Institute (IFPRI). CCAFS SEA also work with other international development organizations, like the World Bank, International Institute of Rural Reconstruction (IIRR), and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA), in several projects in the Philippines. Together with the different CGIAR Centers and other international organization, the CCAFS Program has implemented research for development (R4D) activities in the Philippines, which are

contextualized into the four CCAFS Flagship Programs: FP1 – Priorities and Policies for CSA; FP2 – Climate-Smart Technologies and Practices; FP3 – Low Emissions Development; and FP4 – Climate Services and Safety Nets. The Gender and Social Inclusion (GSI) and Scaling dimensions are integrated into the research, planning, and implementation of these interventions.

With a number of activities in the Philippines, an outcome assessment of CCAFS work in the country was conducted. The goal of the study is to see how the CCAFS SEA outputs contributed to the agriculture-related policies and programs implemented by the Philippine government. Looking at the development outcomes in the agriculture sector of the Philippines, this paper identified, described, verified, and analyzed changes with respect to climate change-related knowledge, attitude, capacity, policy or practice of the CCAFS SEA stakeholders in the country. It should be noted that project outcomes take time to manifest and are usually realized after the life of the project. Thus, only a limited number of outcomes was explored in this paper.

METHODOLOGY

Framework

The study used the outcome harvesting framework (Wilson-Grau 2015; Wilson-Grau and Britt 2013) with elements from the results chain framework (Global Affairs Canada 2016). Outcomes (or results or changes) are identified, described, or measured, assessed, and verified. This is done by collecting evidences of change are collected and then tracing them backwards to assess the contribution of CCAFS (Figure 1).

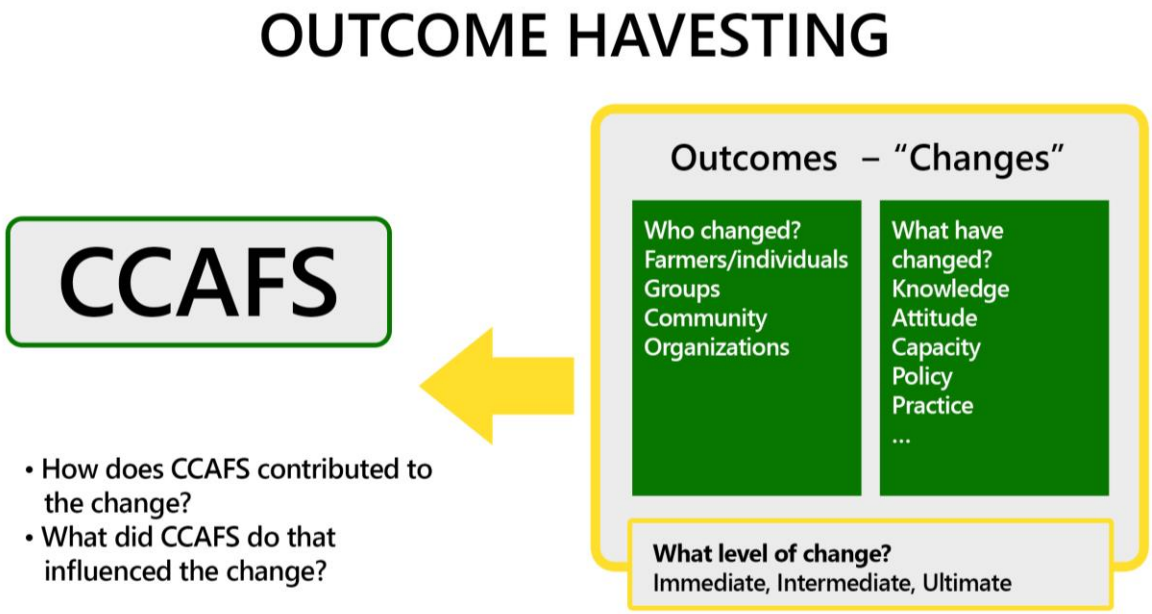


Figure 1. The framework of the study

Can be described or measured, outcomes are behavioral changes brought about by interventions introduced by CCAFS SEA in the Philippines. These changes can occur among individuals, groups, communities, and/or institutions. Change occurs if something is done differently in relation to climate change-related knowledge, attitude, capacity, policy, or practice.

Naturally, outcomes usually happen sometime after the project timeline. Although, there are cases where outcomes are already manifesting during the project. This means that outcomes can occur at various stages of their results chain or impact pathway.

In this study, outcomes are classified as immediate, intermediate, and ultimate (Global Affairs Canada 2016). Specifically:

- **Immediate outcomes** are the changes in the capacity of farmers and communities, as well as technical and managerial staff in the relevant government agencies in the Philippines, particularly in areas where CCAFS SEA operates.
- **Intermediate outcomes** are the changes in their behavior, practice, or performance.
- **Ultimate outcomes** are the changes in the state, conditions, or wellbeing that the farmers and communities experience.

Data Collection and Analysis

Data for the study came from secondary data review and supplemented by key informant interviews (Annex 1). A review of project documents was initially conducted to identify potential outcomes and to identify key informants that can provide more needed information.

Documents reviewed include government documents, project reports, office communications, and other relevant official papers. Media publications, both traditional and online, were studied to enrich the discussions and provide more evidence of the outcomes. The key informants came from the DA, its attached agencies, and organizations that have worked with CCAFS SEA. Using a KII guide, the informants were asked to: describe the mandate of their office; list the main outputs of the office; identify and define the changes they have observed related to climate change; and describe CCAFS contribution, if any, to these changes.

The outcomes were organized under the four CCAFS flagship programs (including GSI). They were arranged to reflect the causal chain of results observed. Each observed outcome is traced back to the CCAFS SEA output that contributed to the outcome.

FINDINGS

The outcomes identified by the study are presented in this section. Pieces of evidence of these identified outcomes are shown to support the claims.

The major changes or outcomes identified among the CCAFS SEA stakeholders in the Philippines are organized under the four flagship programs (including GSI). Describing how CCAFS SEA has contributed to these changes, the outcomes are categorized as immediate, intermediate, or ultimate. Given that some of the activities just finished recently, there are more immediate outcomes than the intermediate and ultimate outcomes. It should be noted that most intermediate and ultimate outcomes usually occur after the life of the project. Moreover, it is also recognized that some outcomes are easier to identify than others.

Sectors Identified to Have Changed

The study identified changes that have happened among a broad range of CCAFS SEA stakeholders in the agriculture sector. The changes, influenced directly or indirectly by CCAFS SEA's work in the Philippines, were found among the key officials in the government (i.e., DA, NEDA), the farmers participated in the Climate-Smart Village (CSV) and school-on-the-air programs, students and teachers participated in the Infomediary campaign, and the media practitioners (i.e., PAJ, PFRB), among others.

Outcomes Associated with Flagship Program 1: Priorities and Policies for CSA

Outcomes identified under FP 1 were immediate, intermediate, and ultimate outcomes (Table 1).

Table 1. Outcomes Associated with Flagship Program 1: Priorities and Policies for CSA

Major CCAFS Contribution (Output)	Outcome		
	Immediate	Intermediate	Ultimate
• Provide a platform for the development of tools that can support policymakers, scientists and others to analyse the effects of climate change on agriculture and food production	• *Knowledge*: Key officials of the Philippines learned about the empirical assessment on the effects of climate change on the country's agriculture sector • *Attitude*: Policy makers and other government officials used the results of the study to recommend appropriate and evidence-based policies and reforms	• *Policy*: The recommendations of the study were also utilized to inform the formulation of the development strategies, particularly agriculture, during the preparation of the Philippine Development Plan 2017-2022 • *Policy*: Philippine Economic Managers (NEDA,DOF,DBM,DTI) used the results of the study in assessing the decision to extend or renew the Quantitative Restriction (QR) and the formulation of the Rice Tariffication Law • *Policy*: The Rice Tariffication Law created the Rice Competitiveness Enhancement Fund.	
• Conducted trainings to build regional capacity in CCAFS methodologies on scenario analysis and economic modeling	• *Knowledge and skills*: Key staff of the government were trained on scenario analysis and economic modeling		
• Published a book on the future of the Philippine agriculture under climate change, focusing on policies, investments and scenarios	• *Knowledge*: Recommendations on the future of the Philippine agriculture under climate change, focusing on policies, investments and scenarios were provided.		
• Supporting the review and implementation of the Philippines' Rice Competitiveness Enhancement Fund (RCEF) and rice sector development plan.	• *Knowledge*: Key officials from the implementing agencies were provided with technical guidance on implementing the four components of RCEF	• *Policy*: Integration of the CCAFS inputs to the implementing guidelines of RCEP	• Through the implementation of RCEF, there is an increased in productivity and income for rice farmers
• Technical assistance for Agri-food Resilience to El	• *Knowledge:* (For policymakers) past and likely future impacts of ENSO on		

Niño-Southern Oscillation (ENSO)	agricultural production and access to food, identification of relevant good practices, and developed ways to improve agricultural resilience in the Philippines		
• Philippines CSA Country Profile	• *Knowledge*: Overview of the agricultural challenges in the country and how CSA can help in the adaptation and mitigation of climate change; information on entry points for investing in CSA at scale		
• Study and policy dialogue on food systems	• *Knowledge:* Provided key officials with scientific evidence of benefits of crop diversification in rice-based cropping system • *Knowledge:* Key stakeholders learned the benefits and challenges of strengthening seed systems through policy reforms and private sector participation		
• Implemented the Climate Risk Vulnerability Assessment (CRVA) framework to supports regional targeting and planning for the establishment of climate-resilient agri-fisheries livelihoods and communities (e.g. AMIA villages)	• *Knowledge and skills:* Key officials learned the evidence-based spatial targeting of agricultural extension and financial investment in areas most at risk or tailored to a specific hazard, crop or lack of adaptive capacity	• *Policy*: Development of an official CRVA process manual to be applied by all the regions in the country	

Immediate outcomes

Several immediate changes were identified under Flagship Program 1, particularly the increase in knowledge, improvement on skills, and change in attitude related to decision making among the officials and staff of key agencies working on climate change and agricultural development. For instance, More than 30 regional staff of the NEDA were trained on scenario analysis and economic modeling (GFSF 2016) under the project *Addressing the impacts of climate change in the Philippine agriculture sector* (IFPRI 2014) implemented by CCAFS and IFPRI. The participants were able to use the knowledge and skills they acquired from the training in analyzing existing and formulating new government policies related to climate change and food security (i.e., Quantitative Restriction, Philippine Development Plan, and Rice Tariffication Law) (IFPRI 2019).

As part of the NEDA, IFPRI, and CCAFS collaboration, the book *The Future of Philippine Agriculture under a Changing Climate: Policies, Investments and Scenarios* was published in 2018 (CCAFS 2019). The publication (Figure 2) provided policy makers with recommendations on the future of the Philippine agriculture under climate change, focusing on policies, investments and scenarios. The much-needed base of knowledge and menu of policy options to support decision- and policymaking on agriculture, climate change, and food security was made available for government officials. As the book addresses climate change and food security issues, focusing on enhancing the adaptation capacity of the Philippine agriculture sector, the then Secretary of Socioeconomic Planning, Dr. Ernesto M. Pernia considered the policy recommendations in the book as timely (NEDA 2018). He also said that the book "shows us ways and provides tools to draw up climate change and socioeconomic scenarios at the regional and provincial levels, allowing us to identify strategies for mitigating climate change risks."

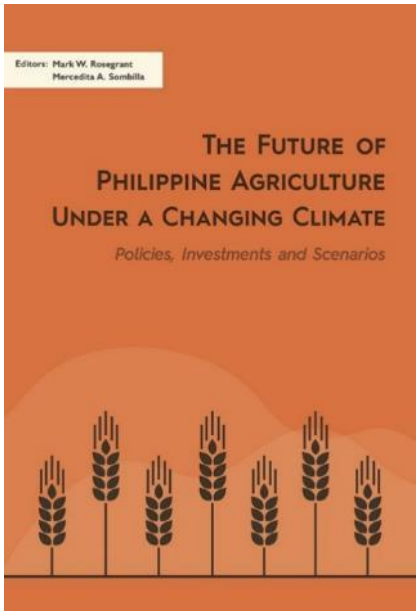


Figure 2. The Future of Philippine Agriculture under a Changing Climate: Policies, Investments and Scenarios

Through various CCAFS publications, knowledge on addressing various climate related risks using CSA was given to key stakeholders in the Philippines. For instance, the World Bank, with support from CCAFS, published a report to improve the Philippines' preparedness for the El Niño–Southern Oscillation (ENSO) by informing stakeholders of ENSO's agricultural and economic impacts (Worldbank 2019). Policymakers learned about the past and likely future impacts of ENSO on agricultural production and access to food, identification of relevant good practices, and developed ways to improve agricultural resilience in the Philippines. Moreover, CIAT and CCAFS, published the CSA Country Profile of the Philippines (Figure 3) in 2017 (Dikitanan et al. 2017). Key government agencies, especially the SWCCO of DA, learned about how CSA can help in the adaptation and mitigation of climate change and provided with information on entry points for investing in CSA at scale.

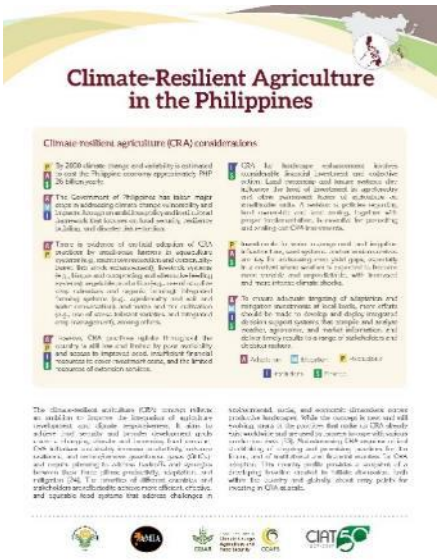


Figure 3. Climate-Resilient Agriculture in the Philippines

With the results of the study (Baruah and Mohanty 2019) on identifying opportunities and challenges for creating a climate-smart food system in the Philippines implemented by CCAFS and CIP, key stakeholders were given scientific evidence of the benefits of crop diversification in rice-based cropping system. Through several knowlegde exchange platforms, such as policy forum (CIP 2019) and webinar (CIP 2020), key stakehodlers from the government, policy institutes, international organizations, academia, and the civil society learned more about the challenges and opportunities of creating a climate-smart food system in the country.

Another outcome of this project, key stakeholders learned the benefits and challenges of strengthening seed systems through policy reforms and private sector participation. CIP and CCAFS provided learning platforms like: webinar (CIP 2020) and field trip for key officials to explore and understand the importance of developing a climate-resilient seed system for the Philippines. In 2020, a six-member delegation from the Philippines joined a learning visit to Dhaka, Bangladesh and New Delhi, India to explore regional cooperation in the seed sector (DA 2020). The delegation includes representative from: DA – Special Area for Agricultural Development (SAAD) Program, Bureau of Plant Industry, Institute of Plant Breeding –

University of Philippines Los Baños, Benguet State University, and Department of Science and Technology – Philippine Council for Agriculture, Aquatic, and Natural Resources Research and Development.

Intermediate outcomes

During the first phase of the DA-Adaptation and Mitigation Initiative in Agriculture (AMIA) program, CIAT and CCAFS provided support in the vulnerability assessment focusing on key hotspots for risks and hazards in the country (CIAT n.d.). Combining analysis for sensitivity and adaptive capacity, this Climate-Risk Vulnerability Assessment (CRVA) initiative was a useful starting point for vulnerability assessment for identifying AMIA sites (DA n.d.). Through this activity, key agencies implementing AMIA learned about the evidence-based spatial targeting of agricultural extension and financial investment in areas most at risk or tailored to a specific hazard, crop or lack of adaptive capacity. This ensured that AMIA investments are cost-effectively channeled to support its overall goals and outcomes and also addressed the inherent spatial and temporal variabilities within and across sites.

In 2020, the Climate-Resilient Agriculture Office (CRAO) (formerly SWCCO) expressed its appreciation of the process of integrating climate risks and vulnerabilities in commodity investment planning. To develop a practical guide to integrating CRVA in regional operations planning, Commodity Investment Planning, and Commodity Roadmap Development in several provinces and commodities, CRAO tapped the expertise of Dr. Leo Chris Palao of CIAT-Biodiversity Alliance, Mr. Eisen Bernardo of CCAFS SEA, and Dr. Leocadio Sebastian, DA Special Adviser (at the time the memorandum was issued) and former CCAFS SEA Regional program (Annex 2). An easy-to-understand and simplified format manual was published in December 2020. Through a memorandum (Annex 3) from the DA Secretary, all provincial offices of DA are required to adopt the CRVA manual in updating their respective Provincial Commodity Investment Plans and in establishing their Provincial Agriculture and Fisheries Extension Systems. The training program on the use of the manual is already scheduled on the first quarter of 2021.

Ultimate outcomes

Through the NEDA, IFPRI and CCAFS collaboration, key officials of the Philippines learned about the empirical assessment on the effects of climate change on the country's agriculture sector and used the results of the project to recommend appropriate and evidence-based policies and reforms (IFPRI 2019). The recommendations generated from the project were also utilized to inform the formulation of the development strategies, particularly agriculture, during the preparation of the Philippine Development Plan 2017-2022 (IFPRI 2019). More importantly, Philippine Economic Managers (i.e., NEDA) used the results of the study in assessing the decision to extend or renew the Quantitative Restriction and the formulation of the Rice Tariffication Law (IFPRI 2019).

In 2019, the Philippine government enacted the Rice Tariffication Law (RTL) to liberalize the importation, exportation, and trading of rice and to lift the quantitative import restriction (Philippines Republic Act 11203 2018). To reform the rice sector, the RTL aims to improve food security, accelerate agricultural growth, and facilitate the structural transformation of the economy (NEDA 2020).

As RTL's major goal of giving better support for Filipino rice farmers, the RTL created the Rice Competitiveness Enhancement Fund (RCEF) (ATI n.d.). With an annual budget appropriation of PhP 10B (USD 200M) for the next six years (starting 2019), the fund aims to finance the modernization of the agriculture sector and directly provide farmers (around 1.89 million rice farmers in 57 provinces of the country) with greater access to cheap credit, high-quality seeds, agricultural machinery and skills training on farm mechanization and other modern farming technologies (ATI n.d.).

CCAFS provided strong support to the review and implementation of the Philippines' RCEF and rice sector development plan. In 2019, the then agriculture Secretary Emmanuel Piñol, requested CCAFS SEA (Annex 4), particularly the Regional Program Leader that time, Dr. Leocadio Sebastian, to help in the process of mapping out the operational guidelines of RCEF. DA Secretary Piñol cited Dr. Sebastian's "expertise would surely be of great help in transforming the Philippine rice industry to be more robust and competitive under a tariff regime". He also emphasized the relevance of Dr. Sebastian's extensive knowledge and

exposure in various successful rice-related and climate change adaptation projects in other CCAFS SEA priority countries, particularly Vietnam.

Dr. William Dar, the current Secretary of DA, continued the involvement of CCAFS in the development of RCEF implementing guidelines. Dr. Bruce Campbell, the director of CCAFS, supported the collaboration of CCAFS SEA and DA (Annex 5). In his letter, Dr. Campbell told Secretary Dar that CCAFS SEA's strategic input will help the Philippine rice sector competitive, profitable for farmer, and climate-smart. He also proposed for the integration of CCAFS and AMIA outputs to review and plan future Philippine agriculture investments.

CCAFS, through CCAFS SEA RPL, worked on how to improve the rice sufficiency level and double the income of farmers in five years by maximizing the RCEF (Annex 6) and to mainstream climate change adaptation measures in DA programs at the regional and local government unit levels (Annex 7).

RCEF has four components, such as: mechanization, seed, credit, and extension services (DA-ATI n.d.). In a workshop, DA and its supporting agencies, together with CCAFS, worked to integrate each component's operational plan and implementing guidelines (Annex 8). To support the RCEF implementation, CCAFS developed a strategic framework (Figure 4) on transforming Philippine Agriculture. The

Figure 4. Strategies to transform Philippine agriculture. Adopted from "A 6-part action plan to transform food systems under climate change: Creative actions to accelerate progress towards the SDGs" by Dinesh et al., 2018

framework aims to improve the productivity of smallholder farmers in the farms, enhance their adaptive capacity against climate change impacts, and reduce the greenhouse gas emissions from their farming activities. These strategies can be applied in the Philippines and must be supported by relevant policies, incentives, programs, and financing schemes. With these collaborations, key officials from the implementing agencies were provided with technical guidance on implementing the four components of RCEF.

Through the implementation of RCEF, an increased in productivity and income for rice farmers were already observed. In a survey (PIA 2020) conducted by the PhilRice among 4,000 RCEF beneficiaries across 55 provinces, respondents observed an additional yield of 440 kilograms per hectare. This increase in harvest, assuming an average price of P17 per kilogram of dry palay, translates to nearly PhP 7,500 per hectare in additional earnings. These outcomes were realized after farmers used certified inbred seed distributed by PhilRice under the RCEF program. Moreover, 97% of respondents reported receiving additional information about farming methods, through the RCEF extension component, that help in improving their farm productivity (Business World 2020).

Outcomes Associated with Flagship Program 2: Climate-Smart Technologies and Practices

Various initiatives related to the Guinayangan CSV project and CSA promotion led to several immediate, intermediate, and ultimate outcomes (Table 2).

Table 2. Outcomes Associated with Flagship Program 2: Climate-Smart Technologies and Practices

Major CCAFS Contribution (Output)	Outcome		
	Immediate	Intermediate	Ultimate
• Implemented the CSV approach in Guinayangan—a platform for testing the technological and institutional options for climate change adaptation and mitigation in agriculture.	• *Knowledge*: Key stakeholders were introduced to the concept of CSV • *Attitude*: Key officials advocating for climate-resilience agriculture • *Knowledge, attitude and skills*: Farmer households learning, applying, and promoting CSA T&Ps	• *Policy:* National mainstreaming of the CSV approach in the DA-AMIA program • *Attitude:* Key officials promoting climate-resilient agriculture related programs via AMIA	

• Published the Climate Resilient Agriculture Practices and Technologies in the Philippines	• *Knowledge*: Key stakeholders learned more about CSA T&Ps • *Skills*: Key stakeholders learned CSA T&Ps selection and prioritization		
• Published the Eight guide steps for setting up a Climate-Smart Village: A trainer's guide	• *Knowledge*: Key stakeholders learned about the process of CSV establishment	• *Knowledge and skills*: Guided a regional workshop on establishing CSVs in ASEAN region attended by DA regional and national staff	
• Trained rural radio broadcasters on communicating CSA and Climate Change	• *Knowledge and Skills*: Members of PFRB learned to produce canned broadcast materials on climate change and CSA • *Attitude*: Members of PFRB became advocate of CSA	• *Policy*: All member stations airing the canned materials • *Program*: A school-on-the-air in Region 2 became an offshoot program of the campaign	
• Implemented a School on the air in the Cagayan Region	• Knowledge: Implementers of the program learned about the protocols in conducting SOA • Knowledge and skills: Farmers learned about	• *Policy*: The experiences and lessons learned of the regional SOA fed in the development of the protocol for a national SOA	• Increase in income and production
• Published a Manual of Operations for the Schools-on-the-Air on Smart Rice Agriculture	• Knowledge: Implementers of the SOA program were provided with the guidelines	• *Policy*: DA recognized the manual of operations as the official guide of the national SOA program under RCEF • Policy: As part of the extension component of RCEF, a nation-wide SOA using the manual will be implemented targeting 300,000 farmers nationwide.	
• Published a for media practitioners on manual for communicating climate change	• Knowledge: Increased awareness of media practitioners on the concept of climate change and CSA		

Immediate outcomes

CCAFS developed the CSV concept "to generate evidence at local scales of what CSA options work best, where, why, and how, and use this evidence to draw out lessons for policymakers, agricultural development practitioners, and investors from local to global levels" (Aggarwal et al. 2018). Introduced by CCAFS in 2015, seven CSVs were established in SEA region to serve as models of climate-resilient communities and field laboratories of CSA T&Ps, including the Guinayangan CSV in the Philippines.

Unlike the other CSVs in SEA, Guinayangan is a not a village but a municipality. Known for rice and coconut production, Guinayangan is composed of 54 barangays in coastal and mountainous areas. In collaboration with IIRR, various CSA T&Ps (Table 3) have been successfully implemented in Guinayangan, such as drought-resilient crop varieties, short-cycle tilapia-raising, community-based seed production, and impoundment systems to improve water supply (IIRR 2017). Guinayangan was also successful in promoting watershed management, community savings for sustaining environmental services, coastal bio-shield (planting mangroves as a natural barrier for tsunamis and storm surges), and scaling out of alternative pig feed production.

Through the CSV activities, farmer households participating in the program improved their knowledge, attitude and skills by learning, applying, and promoting CSA T&Ps. For example, the low external input on small-livestock system piloted in Guinayangan CSV provided farmers with multiple benefits, such as women empowerment and increase in income (CCAFS 2018). Because the practice is non-labor intensive, this livestock production system was proven to be easily managed by women (Rosales et al. 2020).

Farmers also participated in a small agroforestry project in Guinayangan CSV to realize the potential of trees-on-farms in achieving climate change adaptation and mitigation targets (CCAFS 2019). Farmers testified that planting different kinds of vegetables and fruit trees around their house has supported their family's food needs and they gained additional income (IIRR 2019).

Aside from introducing the key stakeholders to the concept of CSV and CSA, the Guinayangan model also illustrates an operative multi-stakeholder approach involving the LGU, national government agencies, non-governmental organizations (NGOs), and smallholder farmers. Through the various engagement activities in Guinayangan CSV, local government officials were able to identify strategies toward climate resiliency, such as: sustainable production, increase farmers income, enhanced transfer of technology, and capacity building of farmers (Bayot et al. 2019).

Seeing how CSA works in Guinayangan CSV, key officials are advocating for it. In a statement, Mayor Cesar Isaac III of Guinayangan envisioned in 2016 that the municipality will be

completely climate-smart by 2019 (Philippine Daily Inquirer 2016). He wanted Guinayangan to be the food basket of the fourth district of Quezon.

Table 3. CSA Portfolio by CSV and Number of Households Involved

CSA T&Ps	Number of Households
Agroforestry	
Agrosilvopastoral system	112
Alleycropping (N-fixing trees)	112
Coppicing or Pruning Trees	112
Living Fences or Hedgerows	112
Multistrata Agroforestry	112
Tree prunings applied as mulch (N-fixing)	112
Windbreaks and Shelterbelts	112
Crop Management	
Legume crop rotation	13
Legume/Legume intercrop	13
Genetic improvement	
Drought tolerance	64
Improved Seeds	173
Salinity Tolerance	56
Livestock	
Adding forage legumes	273
Adding other forage species	273
Agroforestry fodders	273
Crop-residue fodders	273
Herbaceous fodders	273
Manure collection	273
Manure storage	273
Mechanically processed feed (produced)	273
Zero grazing or Cut and carry	273
Nutrient Management	
Manure	273
Urea	24
Soil Management	
Green Manure	8
Mulch (Other materials)	112
No or Zero Tillage	16
Water Management	
Microcatchment	112
System of Rice Intensification (SRI)	64
Financial Services	

Informal saving groups	35
Informal group loans	133
Market Incentives	
Payment for Ecosystem Services	3,000

- tested and evaluated
- tested
- evaluated

Constructed from data available in Bonilla-Findji O and Bui Tan Y. 2018. Southeast Asia Climate-Smart Villages AR4D sites: 2017 Inventory. Wageningen, The Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS).

Aside from local officials, national government officials are also advocating for CSA. In an article he wrote for the Manila Times (2017), DA Secretary William Dar emphasized that:

> "*There is a need to prioritize climate-smart interventions that can produce multiple wins that also address simultaneously the issues of poverty and governance. Eventually, these interventions should result in inclusive agricultural growth or the farmers also reaping the rewards for increasing their production amid the challenges of climate change.*"

He is pushing for the participatory and inclusive nature of CSA, and at the same time, portfolio development and scaling. He cited the CSV concept as an important platform for mainstreaming CSA:

> *"One of the end-results of the efforts in getting villages to adopt climate-smart farming is the rise of Climate-Smart Villages (CSVs) that will also be of great help in monitoring, evaluating and learning measures to deal with the impact of weather changes. The CSVs should eventually be linked to input and output markets that should be part of the adoption of CSA."*

One of the key informants also noted that through various CCAFS publications, an increase in knowledge on CSA T&Ps were observed among the key stakeholders of CCAFS. For instance, the "Compendium of Climate-Resilient Technologies and Approaches in the Philippines" (Figure 5) provided researchers, policymakers, agricultural practitioners, and farmer organizations with a comprehensive outlook about the Philippine situation and the CSA options that farmers can adopt (CCAFS 2020). As part of the book development process, experts

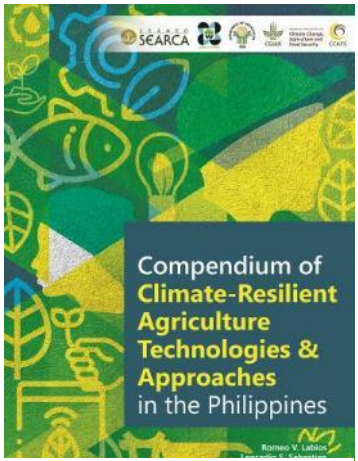


Figure 5. Compendium of CRA Technologies and Approaches in the Philippines

on climate change, agriculture and other relevant fields in the Philippines learned the CSA T&Ps selection and prioritization methodology. The experts ranked the T&Ps to determine those that the country can prioritize for implementation, using the key criteria of agricultural productivity, increase climate resilience, and reduce greenhouse gas emissions (CCAFS 2019).

Aside from policymakers, CCAFS also provide media professionals in the Philippines with information and capacity building support, particularly in reporting climate change and food security and promoting CSA. CCAFS and PFRB implemented a rural radio campaign, dubbed as 'Climate Change i-Broadkas Mo', in strategic regions of the Philippines from 2015 to 2018 (CCAFS 2016). The radio campaign provided PFRB affiliated broadcasters the knowledge and skills in producing ready-to-be-aired broadcast materials on climate change and CSA. The broadcasters were able to produce easy-to-read radio scripts for expert interviews, program segments, and radio programmes covering various topics like climate change concepts, CSVs, CSA T&Ps, and urban agriculture, among others (Cruz et al 2016).

The project trained 268 rural broadcasters and produced 276 ready-to-be-aired scripts, 285 canned interviews, 10 radio spots and two jingles in five different dialects in the Philippines (Navarro et al. 2019). These were sent to more than 200 PFRB members and their network of community radio practitioners all over the Philippines with a combined listenership of two million (Navarro et al. 2019).

With the publication of Klima 101: A Climate Change Guidebook for Philippine Journalists (Visayas-Abano et al. 2016), together with the Philippine Network of Environmental Journalists and the Philippine Agricultural Journalists (PAJ), journalists were able to: understand key concepts that will aid them on reporting on climate change and its impact on agriculture and food security; learn more about government policies to address climate change; and help them effectively communicate climate change and its related issues (Earth Journalism 2016).

Intermediate and ultimate outcomes

The knowledge-generated in Guinayangan CSV is being used in the implementation of the Philippine government's AMIA project to effectively scale out CSA to the whole country and develop sub- and national CSA frameworks (Koerner et al 2019).

At the national level, Guinayangan is recognized as a learning site that influenced the implementation of the Philippines' AMIA program (Nguyen DT 2019). In September 2017, a training course was developed to build the capacity of 17 regional teams of Department of Agriculture on developing local CSVs, which are referred as AMIA Villages. Applying the same approach from CCAFS, Guinayangan also hosted the first AMIA village roving workshop in the Philippines in October 2017.

Currently, 77 AMIA villages (Philippine-adapted CSVs) in 33 provinces (Figure 6) were established based on different typologies of climate-change risks, agro-ecologies, and crop/livestock/fish production systems (CRAO 2021).

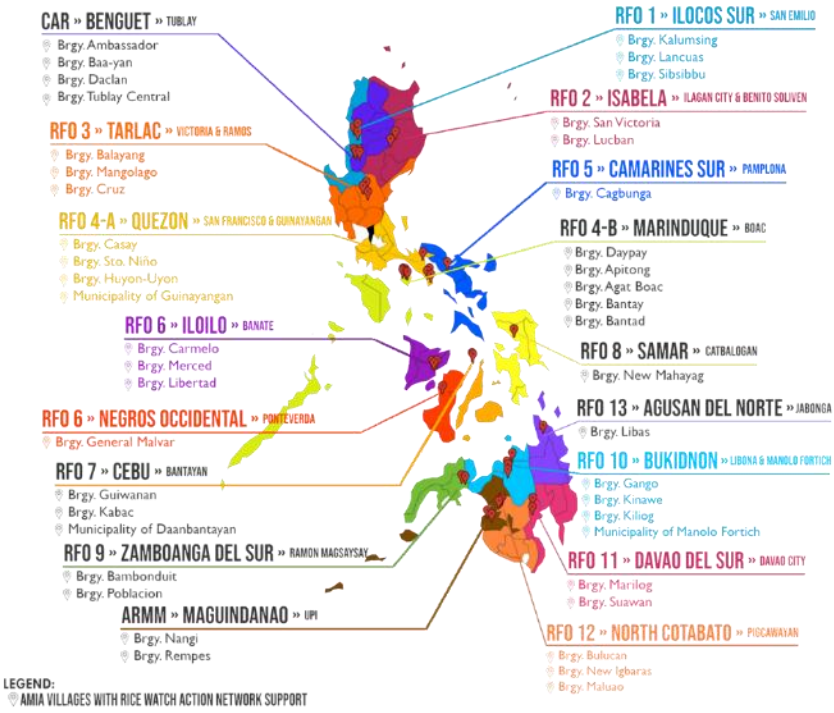


Figure 6. Location of AMIA Villages (DA-CRAO 2021)

With the new mandate from the DA Secretary, DA-CRAO aims to expand and upscale the AMIA program to municipal, provincial and regional levels to test climate-resilient agriculture programs (DA 2020). New targets for AMIA include: presence in all region; expansion to towns and provinces; and transformation of organized groups into climate-resilient business enterprises. AMIA will also be used as a platform to intensify the promotion of climate resiliency programs among rice farmers to reduce crop losses during typhoons. DA aims to pilot more AMIA villages in the regions, provinces, and towns to enable local communities to manage climate risks while pursuing sustainable livelihood vision through CSA (Manila Bulletin 2020).

Together with IIRR, CCAFS published a guide (Figure 7) for agricultural development workers and policymakers that wish to apply the CSV approach (Gonsalves et al 2020). Key stakeholders learned about the process of CSV establishment by providing practical insights for those trying: to implement the approach; and to foster the enabling policy and institutional environment that will help CSVs thrive.

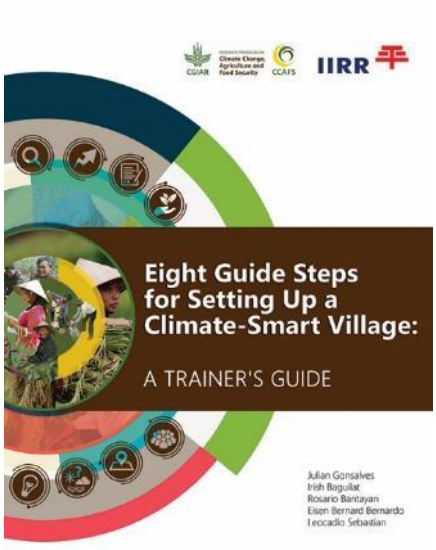


Figure 7. Eight Guide Steps for Setting Up a CSV

An offshoot of the manual, a regional workshop on establishing CSVs in ASEAN region was organized by SEARCA, together with IIRR, GIZ, and CCAFS, on 9-13 July 2019 (SEARCA 2019). The workshop to demonstrate how local-level outscaling of CSA T&Ps can be undertaken under different agro-ecosystems and conditions in Guinayangan CSV. Participants from the ASEAN Climate Resilience Network (ASEAN-CRN), specifically from Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, and Thailand, joined the event. Through field visits to key Guinayangan CSV sites, the workshop aimed to increase the participants' appreciation for CSVs and its potential to significantly improve food security in local communities in the face of heightened risks to agriculture-based livelihood due to changing climate (Manila Times 2019). The participants were able to prepare re-entry action plans for their respective countries, including desired results, progress indicators, activities, timeline, and inputs/resources needed.

An offshoot of the 'Climate Change i-Broadkas Mo' rural radio campaign, CCAFS, together with DA- RFO2, PFRB, PAJ Cagayan Valley Chapter, PhilRice Isabela, and Cagayan Valley Agriculture and Resources Research and Development Consortium, implemented a collaborative radio-based distance learning project dubbed as "Kaalamang Pagsasaka sa Himpapawid: School-on-the-Air on Climate Smart Agriculture (SOA-CSA) in Cagayan Valley," from February to August 2018 in Cagayan Valley region (Navarro et al. 2019). A total of 4,645 farmers graduated from a five-month SOA program on 24 August 2018. Farmer enrollees learned about climate change and CSA to help them thrive under current climatic conditions. The SOA program covers four of the five provinces of Cagayan Valley: Cagayan, Isabela, Nueva Vizcaya, and Quirino. Isabela

has the highest number of graduates (2,715), followed by Cagayan (1,030), Nueva Vizcaya (700), and Quirino (200).

Dir. Narciso Edillo, Regional Executive Director of DA Regional Field Office 2, commended the program, which fostered multi-sectoral and multi-stakeholder engagement among the local government units, state universities and colleges, government offices, non-government organizations, and international partners (CCAFS 2019). He lauded the use of radio to facilitate interactions among farmers, intermediaries, and experts. As the guest speaker in the graduation ceremony, Hon. Francis Tolentino, Presidential Adviser for Political Affairs, also admired the SOA program, which, he said, is a creative and innovative way to deliver services for the people. He pledged that agriculture remains a priority of the national government and promised to share the SOA story of Cagayan Valley with Philippine President Rodrigo Duterte (CCAFS 2019).

A study (Figure 8) was conducted to assess the intermediate outcomes of the SOA on learner-farmers in Cagayan Valley in the adoption of climate-smart rice technologies (Raquepo et al 2020). The study found out that the SOA program has been an effective and efficient medium to reach and inform farmers about climate-smart rice technologies. Its initial outcomes are evident in the high awareness and knowledge of the causes and effects of climate change among the farmers. Likewise, the initial positive effects of the SOA-CSA are noted in the farmers' "almost always" use of the recommended climate-smart rice technologies, which has resulted to an additional yield increase of 19 cavans per hectare and in turn an increase in farm income of about PHP 18,000.

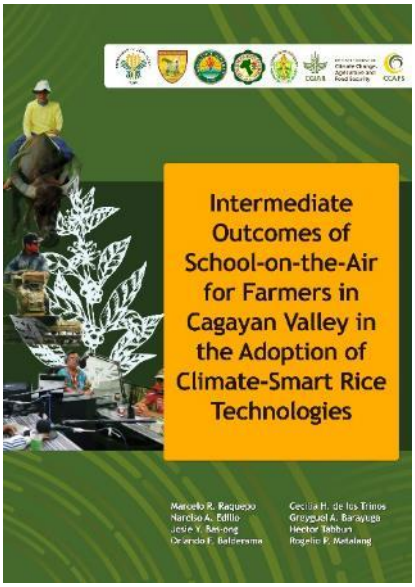


Figure 8. Intermediate Outcomes of School-on-the-Air for Farmers in Cagayan Valley in the Adoption of Climate-Smart Rice Technologies

Because of the initial success of the SOA, key officials of DA learned about the protocols in conducting the program. Based on the manual developed for the SOA in Cagayan Valley (DA RFO2 et al 2018), DA, together with PFRB and CCAFS, developed a manual of operations for the SOA on Smart Rice Agriculture program. Titled "Manual of Operations of the School-on-the-Air on Smart Rice Agriculture (SOA-SRA)," the manual (Figure 9) provides step-by-step process, concepts, strategies, and best practices in the conduct of educational radio programs (DA 2020). It has six chapters discussing: (1) context, (2) introduction, (3) implementation scheme, (4) organizing and conducting the SOA, (5) logistical requirements, and (6) reporting procedures. Also included are the various activities from the pre-broadcast to the post-broadcast phase, roles and responsibilities of partners involved in the program, references on modern, climate-smart rice agriculture and a sample SOA curriculum.

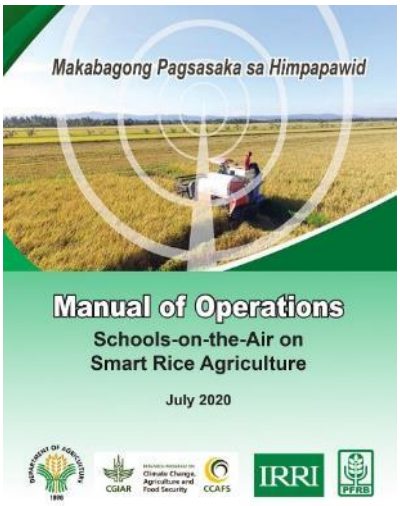


Figure 9. Manual of Operations of the School-on-the-Air on Smart Rice Agriculture

In a memorandum (Annex 9) from the Office of the Secretary, DA recognized the manual of operations as the official guide of the national SOA program under RCEF. DA Secretary DAR emphasized the importance of the SOA program as a platform, "not only to deliver news, but also to enhance the capabilities of farmers" (ATI 2020). The SOA-SRA, which is under the extension service component of RCEF, targets to provide a learning program in rice producing provinces, initially serving 300,000 rice farmer-enrollees within two years (Annex 10).

Outcomes Associated with Flagship Program 3: Low Emissions Development; Flagship Program 4: Climate Services and Safety Nets; and GSI: Gender and Social Inclusion

Because of limited activities under FP3, FP4 and GSI conducted in the Philippines, all the immediate, intermediate, and ultimate outcomes (Table 4) under the said Flagship Programs are discussed together in this section.

Table 4: Outcomes Associated with Flagship Program 3: Low Emissions Development; Flagship Program 4: Climate Services and Safety Nets; and GSI: Gender and Social Inclusion

Major CCAFS Contribution (Output)	Outcome		
	Immediate	Intermediate	Ultimate
• Published the books on Strategic Policy Response to Climate Change in the Philippines	• *Knowledge*: Policy makers learned about climate change mitigation policies, particularly those pertinent to the Philippine agriculture sector.		
• Implemented climate smart mapping and adaptation planning (CS-MAP) in Ivisan	• *Knowledge and skills*: Key stakeholders learned how to implement the CS-MAP Process • *Attitude*: Local government officials supported the activities		
• Implemented the Infomediary campaign - an initiative to mobilize high school students to serve as information providers on climate-smart agriculture for rice in the Philippines	• *Knowledge and skills*: Trained 225 teachers on CSA, rice production, and the use of the various information and social media platforms • *Knowledge, attitude and skills*: Students actively participated in the campaign and became effective Infomediaries of CSA in their respective communities	• *Policy*: The Philippine Department of Education had issued memoranda endorsing training programs to TecVoc teachers nationwide • *Knowledge*: A model for integrating CSA into secondary-level curriculum was also developed • *Attitude and skills*: An effective model: to transfer CSA4Rice information to farmers; and to positively affect the students to pursue agriculture-related courses in the future	• Establishment of Climate Change Adaptive Schools - a nationwide government program that aims to enhance school-community interaction with regard to climate change and technologies that may help rice-farming communities adapt to its impact.

Immediate outcomes

CCAFS, together with IRRI and SEARCA, published the two volumes of Strategic Policy Response to Climate Change in the Philippines. The first one (Figure 10) provided key

stakeholders, most especially policy makers, with relevant information on the Philippine climate change policy response strategy in agriculture, with focus on local implementation of climate change policies. Specifically, the book describes the local institutional setting for climate change policy implementation in agriculture, the dynamics by which climate change policies in agriculture are translated into meaningful actions and desired changes, and the bottlenecks to effective climate change policy implementation in agriculture at the local level (Rebugio et al. 2018). The second one features relevant information on climate change mitigation policies, particularly those pertinent to the Philippine agriculture sector. The book provided the important entry point for further policy research or deeper investigation of the translation of national climate change policies into ordinances and enabling mechanisms at the local level (Rebugio et al).

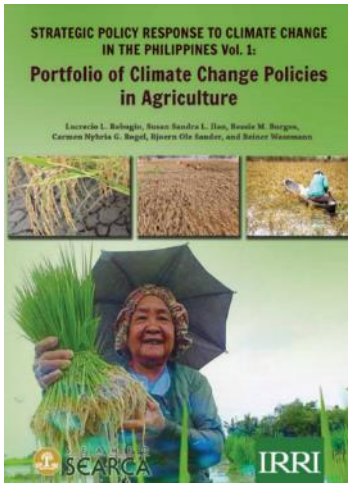


Figure 10. Strategic Policy Response to Climate Change in the Philippines

Another outcome under this section is that the key stakeholders learned how to implement the Climate-Related Risk Maps and Adaptation Plans in agriculture (CS-MAP) process. The CS-MAP methodology was developed and successfully implemented by CCAFS in Vietnam since 2017. Led by IIRR, CS-MAP (Figure 11) was conducted for the 15 villages (locally known as barangay) of Ivisan, Capiz in the Philippines (IIRR 2020). The main objective of the CS-MAP initiative was to understand how the LGU in Ivisan coped with, mitigated, and prepared for climate-related risks in the livelihood and agri-fisheries sector. The CS-MAPs developed will assist in decision making and planning for risks, in normal and severe years, on a long-term basis. These maps have two purposes: (i) to identify the climate risks and livelihood vulnerability (high, medium, and low), depending on the areas, for each climate-related hazard event (drought, flood, salinity, storm, surge, etc.); (ii) to provide tools for the LGU of Ivisan to guide their operations in anticipating and preparing for climate risk events, and thus ease stress, after each event.

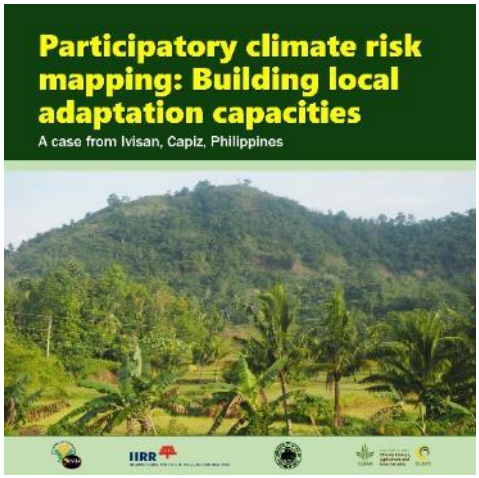


Figure 11. Participatory climate risk mapping: Building local adaptation capacities. A case from Ivisan, Capiz, Philippines

Local government officials of Ivisan actively supported and participated the CS-MAP activities. During the CS-MAP workshop, government officials, together with the other stakeholders, identified existing policies that will increase the LGU's and community's capacity to adapt and mitigate identified the climate-related risks.

Intermediate and ultimate outcomes

To address the issue of limited agricultural extension services in the Philippines, PhilRice and CCAFS SEA pioneered an Infomediary Campaign (Figure 12) tapping 208 schools nationwide (which is already 75 percent of all the TecVoc High schools in the country) to be the nucleus of agricultural extension (PhilRice 2017). To establish alternative communication pathways in communicating climate-smart agriculture (CSA), students are engaged as "infomediaries" or information providers for rice farming and CSA. For more than three years, the campaign conducted various activities using information and communication technologies and experiential learning tools to study and develop the Infomediary model as an innovative knowledge sharing scheme to improve farmers' access to CSA information and technologies.

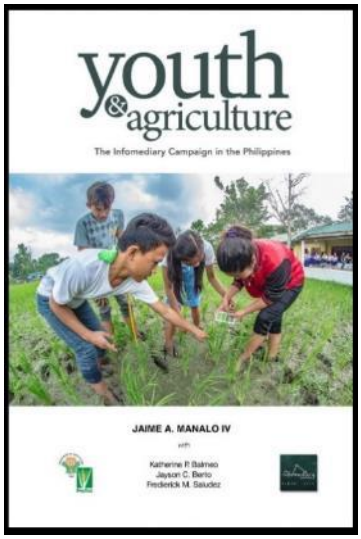


Figure 12. Youth and agriculture: The Infomediary Campaign in the Philippines

To build the capacity of teachers, the campaign designed and implemented training programs on CSA, rice production, and the use of the various related information and social media platforms (PhilRice Text Center, Infomediary Facebook group and fan page). The project trained 225 teachers from the different regions of the country, with a combined direct and indirect reach of 234,000 students (PhilRice 2017). With the lessons from the successful project implementation, a model for integrating CSA into secondary-level curriculum was also developed.

The campaign has already received international recognitions, including a special commendation as one of the top five policy briefs during the Communication Policy Research: South 2014 conference and as a successful case in youth engagement at the 42nd Session of the United Nations Committee on World Food Security. In 2019, the campaign was featured

in the United Nations Food and Agriculture Organization's publication Youth in Motion for Climate Action, as one of the ten successful youth-focused or youth-led initiatives in agriculture that address the impacts of climate change.

The success of the Infomediary campaign led to an off-shoot project funded by the DA-Bureau of Agricultural Research that aimed to conceptualize and develop climate change-adaptive schools (DA-BAR n.d.). PhilRice collaborated again with the Technical-Vocational (TecVoc) Unit of the DepEd to realize this project. From 2017 to 2019, 12 high schools strategically located across the country were developed as key information hubs on climate change-ready rice production technologies for improved agricultural productivity. Most of the schools participated are the best implementers of the previous project – Infomediary Campaign (Manalo et al. 2019).

Figure 13. What is a climate change-adaptive school?

CONCLUSION

Although Philippines is not a priority country of CCAFS, there is still a lot of significant works done in the country, producing a range of outcomes. The set of interventions, together with the resulting outcomes, clearly illustrates how CCAFS provided a holistic approach in promoting CSA in the Philippines. From policy review and development up to program planning and implementation, CCAFS provided significant amount of support to the key government agencies working on agricultural development. The progression of the collaboration among CCAFS, DA and other related government agencies, and the key stakeholders also shows how to create new activities and achieve greater outcomes by building on previous outputs and outcomes. These interactions have contributed in enhancing the knowledge, attitude, and skills of relevant stakeholders on climate change that led to crafting important policies and strategies.

CCAFS initially worked with the policy sector by providing technical support on policy reviews and capacity building of key staff. The knowledge products and skills acquired from CCAFS contributed in the process of reviewing and developing important national policies, particularly the RTL. The RTL paved the way for the establishment of the RCEF to reform the rice sector. Through the RCEF, the Philippine government allotted a total of PhP 60B (USD 1.2B) for farm machinery and equipment, seed development, credit assistance, and extension services targeting 1.89 million rice farmers in 57 provinces of the country. With its technical expertise, CCAFS was able to actively participate and significantly contribute in the process of developing the implementation guidelines of RCEF. After a year of implementation, RCEF has already improved the agricultural productivity and income of its beneficiaries.

The previous works of CCAFS also provide RCEF platforms to strategically implement its activities. Particularly, the AMIA villages, which is the Philippine version of CSVs, are now being tapped by DA to achieve its goals of a climate-smart rice agriculture. To date, there are 77 AMIA villages in 33 provinces that can carry out the RCEF activities. Another significant work of CCAFS that is integrated in RCEF is the SOA program. Included in the extension component of RCEF, the experiences and lessons learned of the initial regional SOA (which is also an offshoot of a previous CCAFS climate change radio campaign) fed in the development of the protocol for a national SOA on rice, targeting 300,000 farmers nationwide.

REFERENCES

Aggarwal et al. (2018). The climate-smart village approach: framework of an integrative strategy for scaling up adaptation options in agriculture. *Ecology and Society* 23(1), 14.

ATI. 2020. *DA Shares Rice Prod'n Technologies Thru Radio*. Retrieved December 2020, from https://ati.da.gov.ph/ati-main/news/08282020-2203/da-shares-rice-prod%E2%80%99n-technologies-thru-radio.

ATI. N.D. Rice Competitiveness Enhancement Fund (RCEF). Retrieved December 2020, from https://ati.da.gov.ph/ati-main/PROGRAMS/RCEF.

BAR. N.D. DA-PhilRice, DepEd engage youth in agri through climate change-adaptive schools Retrieved December 2020, from https://www.bar.gov.ph/index.php/press-room/news-and-events/6502-da-philrice-deped-engage-youth-in-agri-through-climate-change-adaptive-schools

Baruah S, Mohanty S. 2019. Progress Report: Challenges and opportunities for creating a climate-smart food system in the Philippines and Vietnam. Hanoi, Vietnam: International Potato Center Asia. Retrieved December 2020, from https://ccafs.cgiar.org/resources/publications/progress-report-challenges-and-opportunities-creating-climate-smart.

Bayot RS, Vidallo RR, Palima CM, Laco JO, Jordan RI, Locaba RV, Rosales BO, Luistro A, Anda G, Obligado MECB. 2019. Appreciation Workshop on Climate-Resilient Agriculture for the Local Government Officials of Quezon Province (4th District): A Workshop Report. Silang, Cavite: International Institute of Rural Reconstruction (IIRR). Retrieved December 2020, from https://hdl.handle.net/10568/107320

Bonilla-Findji O, Bui Tan Y. 2018. Southeast Asia Climate-Smart Villages AR4D sites: 2017 Inventory. Wageningen, The Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Retrieved December 2020, from https://cgspace.cgiar.org/bitstream/handle/10568/100251/CSV_SEA_2017_Inventory.pdf

Business World. 2020. Rice farmer incomes, yields improve due to RCEF — study. Retrieved December 2020, from https://www.bworldonline.com/rice-farmer-incomes-yields-improve-due-to-rcef-study/.

CCAFS. 2016. Rural Folks to Hear More Climate-Smart Agriculture Options 'On-Air'. Retrieved December 2020, from https://ccafs.cgiar.org/news/rural-folks-hear-more-climate-smart-agriculture-options-air#.WtQVtC5ubIV.

CCAFS. 2018. Climate-Smart Farmers in Cagayan Valley, Philippines Graduate from School-On-The-Air Program. Retrieved December 2020, from https://ccafs.cgiar.org/news/climate-smart-farmers-cagayan-valley-philippines-graduate-school-air-program.

CCAFS. 2018. Low Inputs, Big Gains: The Benefits of Climate-Smart Livestock Production. Retrieved December 2020, from https://ccafs.cgiar.org/news/low-inputs-big-gains-benefits-climate-smart-livestock-production

CCAFS. 2019. Enhancing the Resilience of the Philippine Agriculture against Climate Change. Retrieved December 2020, from https://ccafs.cgiar.org/news/enhancing-resilience-philippine-agriculture-against-climate-change#.Xi6SMGgzaM8

CCAFS. 2019. New Book Guides Policymakers to Address Climate Change Impacts on Agriculture in the Philippines. Retrieved December 2020, from https://ccafs.cgiar.org/news/new-book-guides-policymakers-address-climate-change-impacts-agriculture-philippines.

CCAFS. 2019. Why Planting Trees on Farms Benefits Farmers under a Changing Climate. Retrieved December 2020, from https://ccafs.cgiar.org/news/why-planting-trees-farms-benefits-farmers-under-changing-climate

CCAFS. 2020. Technologies and Approaches for a Climate-Resilient Philippine Agriculture. Retrieved December 2020, from https://ccafs.cgiar.org/news/technologies-and-approaches-climate-resilient-philippine-agriculture.

CIAT. N.D. Climate-Risk Vulnerability Assessment (CRVA) to support regional targeting and planning for the Adaptation and Mitigation Initiative in Agriculture (AMIA). Retrieved December 2020, from https://ciat.cgiar.org/ciat-projects/climate-risk-vulnerability-assessment-crva-to-support-regional-targeting-and-planning-for-the-adaptation-and-mitigation-initiative-in-agriculture-amia/.

CIP. 2019. Policy Forum Highlights Opportunities for Climate-Smart Farming in the Philippines. Retrieved December 2020, from https://cipotato.org/blog/policy-forum-philippines/.

CIP. 2020. Regional Cooperation for Building a Resilient Seed System in the Philippines Retrieved December 2020, from https://cipotato.org/event/webinar-regional-cooperation-building-resilient-seed-system-philippines/.

CIP. 2020. Webinar: Role of Women in Developing Climate-Smart Seed Systems in the Philippines. Retrieved December 2020, from https://cipotato.org/event/webinar-role-women-developing-climate-smart-seed-systems-philippines/.

Cruz AC, Tabing L, Navarro R. 2016. Climate change reporting for rural broadcasters: Mobilizing the Philippine media for climate change awareness. CCAFS Working Paper No. 177. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). . Retrieved December 2020, from https://hdl.handle.net/10568/75632'

DA. 2020. DA pushes for climate-resilient agri-fishery sector. Retrieved December 2020, from https://www.da.gov.ph/da-pushes-for-climate-resilient-agri-fishery-sector/

DA. 2020. RCEF seed recipients attain higher rice yield, more income. Retrieved December 2020, from https://pia.gov.ph/news/articles/1051391

Dar W. 2017. Climate smart agriculture. The Manila Times. Retrieved December 2020, from https://www.manilatimes.net/2017/03/17/business/columnists-business/climate-smart-agriculture-2/317637/?fbclid=IwAR2ULwrSi_Er1zT3Y8Hkc5TIq4

Department of Agriculture-Regional Field Office No. 02, et al. 2018. Kaalamang Pagsasaka sa Himpapawid - School-on-the-Air project on Climate Smart Agriculture (SOA–CSA) in Cagayan Valley: Manual of Operations. Tugegarao City, Philippines: Department of Agriculture. Retrieved December 2020, from https://hdl.handle.net/10568/92095

Dikitanan R, Grosjean G, Nowak A, Leyte J. 2017. Climate-Resilient Agriculture in Philippines. CSA Country Profiles for Asia Series. International Center for Tropical Agriculture (CIAT); Department of Agriculture - Adaptation and Mitigation Initiatives in Agriculture, Government of the Philippines. Manila, Philippines. 24 p. Retrieved December 2020, from https://cgspace.cgiar.org/bitstream/handle/10568/82572/CRA_Profile_Philippines.pdf?sequence=5&isAllowed=y.

Earth Journalism. 2016. Philippines publishes new climate change guidebook for journalists. Retrieved December 2020, from https://earthjournalism.net/resources/philippines-publishes-new-climate-change-guidebook-for-journalists

FAO. 2019. Youth in motion for climate action! A compilation of youth initiatives in agriculture to address the impacts of climate change http://www.fao.org/3/ca5746en/ca5746en.pdf

Germanwatch. 2019. Global Climate Risk Index 2020. Berlin, Germany: Germanwatch. Retrieved December 2020, from https://germanwatch.org/sites/germanwatch.org/files/20-2-01e%20Global%20Climate%20Risk%20Index%202020_14.pdf

Global Affairs Canada, Results-Based Management for International Assistance Programming at Global Affairs Canada: A How-to Guide, 2nd edition, 2016.

Gonsalves J, Baguilat I, Bantayan R, Bernardo EB, Sebastian L. 2020. Eight guide steps for setting up a Climate-Smart Village: A trainer's guide. Cavite, Philippines: International Institute of Rural Reconstruction (IIRR). Retrieved December 2020, from https://cgspace.cgiar.org/bitstream/handle/10568/107725/8%20Guide%20Steps.pdf

GSFS. 2016. Engaging national policymakers through scenario analysis and economic modeling in the Philippines. Retrieved December 2020, from https://globalfutures.cgiar.org/2016/02/01/engaging-national-policymakers-through-scenario-analysis-and-economic-modeling-in-the-philippines/

IFPRI. N.D. Addressing the Impacts of Climate Change in the Philippine Agriculture Sector. Retrieved December 2020, from https://www.ifpri.org/project/addressing-impacts-climate-change-philippine-agriculture-sector

IIRR. 2019. Agroforestry for a Changing Climate. Cavite, Philippines: International Institute of Rural Reconstruction (IIRR). Retrieved December 2020, from https://cgspace.cgiar.org/handle/10568/102276

IIRR. 2020. Participatory climate risk mapping: Building local adaptation capacities. A case from Ivisan , Capiz , Philippines. Cavite, Philippines: International Institute of Rural Reconstruction (IIRR). Retrieved December 2020, from https://hdl.handle.net/10568/110422

Koerner J, Bayot RS, Rosimo M, Vidallo R, Gonsalves J. 2019. Scaling the capacities to adapt to a changing climate: Experiences of the AMIA Climate Resilient Villages, Philippines. CCAFS Info note. Wageningen, Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Retrieved December 2020, from https://hdl.handle.net/10568/105717

Lowder S, Regmi A. 2019. Assessment of outcomes based on the use of PIM-supported foresight modeling work, 2012-2018. Retrieved December 2020, from https://www.ifpri.org/publication/assessment-outcomes-based-use-pim-supported-foresight-modeling-work-2012-2018.

Manalo J, Manalo H, Berto J, Bautista AM, Hallares R, Maramara R, Saludez F. 2019. What is a climate change adaptive school? Retrieved December 2020, from https://www.researchgate.net/publication/334480977_what-is-a-climate-change-adaptive-school

Manalo Katherine Balmeo, Jayson Bert and Fredierick Saludez 2017. Youth & Agriculture: A Book on PhilRice's Infomediary Campaign. Retrieved December 2020, from https://www.researchgate.net/publication/305319753_Youth_and_agriculture_The_Infomediary_Campaign_in_the_Philippines

Navarro RL, Celeridad RLV, Matalang RP, Tabbun HU, Sebastian LS. 2019. Harnessing Rural Radio for Climate Change Mitigation and Adaptation in the Philippines. CCAFS Working Paper No. 275. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Retrieved December 2020, from https://hdl.handle.net/10568/101952.

Navarro RL, Matalang RP, Tabbun HU, Sebastian LS. 2019. Reaching the Unreached: School-on-the-air on Climate-Smart Agriculture (SOA-CSA) in Cagayan Valley. CCAFS Working Paper No. 259. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Retrieved December 2020, from https://ccafs.cgiar.org/resources/publications/reaching-unreached-school-air-climate-smart-agriculture-soa-csa-cagayan

NEDA. 2018. NEDA, IFPRI launch book on PH agriculture, climate change. Retrieved December 2020, from https://www.neda.gov.ph/%E2%80%8Bneda-ifpri-launch-book-on-ph-agriculture-climate-change/

NEDA. 2020. Rice Tariffication Benefits All Filipinos, Enhances Productivity and Competitiveness of Rice Sector – NEDA. Retrieved December 2020, from https://www.neda.gov.ph/rice-tariffication-benefits-all-filipinos-enhances-productivity-and-competitiveness-of-rice-sector-neda/.

Nguyen DT, Villanueva J, Khounthavong M, Eam D. 2019. Evaluation of Climate-Smart Village roving workshop as a farmer-to-farmer learning platform. CCAFS Working Paper No. 257. Wageningen, the Netherlands: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). Retrieved December 2020, from www.ccafs.cgiar.org https://cgspace.cgiar.org/bitstream/handle/10568/100123/CCAFS%20WP%20257_CSV%20Roving%20Workshop.pdf

Philippine Daily Inquirer. 2016. Climate-smart farms yield bigger profit. Retrieved December 2020, from https://business.inquirer.net/215176/climate-smart-farms-yield-bigger-profit#ixzz6l2IDlhih

Philippine Department of Agriculture. 2020. Manual of Operations for the Schools-on-the-Air on Smart Rice Agriculture. Hanoi, Vietnam: CGIAR Research Program on Climate Change, Agriculture and Food Security Regional Program in Southeast Asia. Retrieved December 2020, from https://hdl.handle.net/10568/109134.

Philippine Republic Act No. 11203. 2019. An Act Liberalizing the Importation, Exportation and Trading of Rice, Lifting for the Purpose the Quantitative Import Restriction on Rice, and For Other Purposes. Retrieved December 2020, from https://lawphil.net/statutes/repacts/ra2019/ra_11203_2019.html.

PhilRice. 2017. Rice, youth, and climate change! PhilRice Magazine November 2017 issue. Retrieved December 2020, from https://www.researchgate.net/publication/320987748_Rice_youth_and_climate_change

PIA. 2018. School-on-the-air in CagVal, climate smart agri radio campaign cited in Vietnam. Quezon City, Philippines: Philippine Information Agency. Retrieved December 2020, from https://pia.gov.ph/news/articles/1015729

Raquepo MR, Edillo NA, Bas-ong JY, Balderama OF, de los Trinos CH, Barayuga GA, Tabbun H, Matalang RP. 2020. Intermediate Outcomes of School-on-the-Air for Farmers in Cagayan Valley in the Adoption of Climate-Smart Rice Technologies. Cagayan, Philippines: Department of Agriculture-Regional Field Office 2. Retrieved December 2020, from https://hdl.handle.net/10568/108057

Rebugio L, Ilao SS, Burgos B, Rogel CN, Sander BO, Wassman R. 2018. Strategic Policy Response to Climate Change in the Philippines Vol. 1: Portfolio of Climate Change Policies in Agriculture. Laguna, Philippines: Southeast Asian Regional Center for Graduate Study and Research in Agriculture and International Rice Research Institute. Retrieved December 2020, from https://cgspace.cgiar.org/bitstream/handle/10568/100542/Strategic%20Policy%20Response%20to%20Climate%20Change%20in%20the%20Philippines_Vol.%201.pdf

Rebugio L, Ilao SS, Burgos B, Rogel CN, Wassman R, Sander BO. 2018. Strategic Policy Response to Climate Change in the Philippines Vol. 2: Exploring How Climate Change Policies are Translated into Local Actions in the Agriculture Sector. Laguna, Philippines: Southeast Asian Regional Center for Graduate Study and Research in Agriculture and International Rice Research Institute. Retrieved December 2020, from https://cgspace.cgiar.org/bitstream/handle/10568/100541/Strategic%20Policy%20Response%20to%20Climate%20Change%20in%20the%20Philippines_Vol.%202.pdf

Rosales B, Palima C, Hernandez G, Gonsalves J, Rosimo M, Santiago R, Vidallo R, Locaba R, Yim S. 2020. Native pigs: a climate resilient business enterprise. Cavite, Philipppines: International Institute of Rural Reconstruction (IIRR). Retrieved December 2020, from https://cgspace.cgiar.org/bitstream/handle/10568/108081/Native%20pig%20primer.pdf

SAAD. 2020. PH joins learning visit to explore Regional Cooperation in Seed Sector. Retrieved December 2020, from http://saad.da.gov.ph/2020/02/ph-joins-learning-visit-to-explore-seeds-without-borders-agreement/.

SEARCA. 2019. Establishing Climate-Smart Villages in the ASEAN Region to Improve Food Security and Resiliency in Local Communities (Narrative Report). Laguna, Philippines: Southeast Asian Regional Center for Graduate Study and Research in Agriculture (SEARCA). Retrieved December 2020, from https://ccafs.cgiar.org/resources/publications/establishing-climate-smart-villages-asean-region-improve-food-security

Sebastian L. 2019. Transforming Philippine Agriculture under Climate Change. Presentation to the RCEF planning workshop 2019, Quezon City, Philippines.

Sutton W, Srivastava J, Rosegrant M, Valmonte-Santos R, Ashwill M. 2019. Striking a Balance : Managing El Niño and La Niña in Philippines' Agriculture. World Bank, Washington, DC. Retrieved December 2020, from https://openknowledge.worldbank.org/handle/10986/31521

SWCCO. N.D. Climate Resiliency and Vulnerability Assessment (CRVA). Retrieved December 2020, from http://swcco.da.gov.ph/index.php/climate-resiliency-and-vulnerability-assessment-crva/.

SWCOO. N.D. AMIA Villages. Retrieved December 2020, from http://swcco.da.gov.ph/index.php/amia-villages/

The Manila Times. 2019. Quezon villages go climate-smart. Retrieved December 2020, from https://www.manilatimes.net/2019/08/17/business/green-business/quezon-villages-go-climate-smart/601357/.

Visayas-Abano I, Navarro R, Perez R. 2016. Klima 101: A climate change guidebook for Philippine journalists. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security, Philippine Network of Environmental Journalists (PNEJ), and Philippine Agricultural Journalists (PAJ). Retrieved December 2020, from https://earthjournalism.net/sites/default/files/2019-10/Klima101%20Guidebook.compressed.pdf

Wilson-Grau R. 2015. Outcome Harvesting. Better Evaluation. Retrieved December 2020, from http://betterevaluation.org/plan/approach/outcome_harvesting.

ANNEXES

ANNEX 1: List of Supplementary Key Informant Interviewees

Dr. Rosana Mula
Assistant Director
Agricultural Training Institute
Department of Agriculture
Quezon City, Philippines
rosana.mula@gmail.com

Dir. Narciso Edillo
Regional Executive Director
Department of Agriculture – Regional Field Office 2
Cagayan, Philippines
da_rfu2000@yahoo.com

Dr. Rogelio P. Matalang
President
Philippine Federation of Rural Broadcasters
Cagayan, Philippines
rpmatalang@yahoo.com

Annex 2: Memorandum on Integrating CCA-DRR in the updated CIP Process

Republic of the Philippines
OFFICE OF THE SECRETARY
Elliptical Road, Diliman
1100 Quezon City

September 18, 2020

MEMORANDUM

FOR : **AGNES CATHERINE T. MIRANDA**
Assistant Secretary-Designate, Planning and Project Development,
Director, Planning, Monitoring and Evaluation Service &
Component Head, DA-PRDP NPCO IPLAN

FROM : **ALICIA G. ILAGA**
Director, Climate-Resilient Agriculture Office (CRAO) and
Balik Probinsya, Bagong Pag-asa Program &
DA Deputy Spokesperson

SUBJECT : **INTEGRATING CCA-DRR IN THE UPDATED CIP PROCESS**

This is to acknowledge your response to the points raised by CRAO per our memo dated Sept. 9, 2020. We recognize your predicament on the issue of integrating CCA-DRR in the updated CIP process. However, in the context of our knowledge of climate change and climate science, we differ in appreciation of the process of integrating climate risks and vulnerabilities in commodity investment planning, from the recommended procedure of PRDP I-Plan consultant, Dr. Emmanuel Torrente.

Given this consideration, the CRAO has sought the expertise that can help us develop the practical guide to integrating Climate Risks Vulnerability Assessments (CRVA) in regional operations planning, Commodity Investment Planning, Commodity Roadmap Development in an easy-to-understand and simplified format, including a demonstration in several provinces and commodities. CRAO, in partnership with Dr. Leo Chris Palao of CIAT-Biodiversity Alliance, Mr. Eisen Bernardo of CCAFS-SEA, and Dr. Leocadio Sebastian (DA Special Adviser & former CCAFS SEA Regional program leader), shall be developing these guidelines. We expect to complete the protocol by December 31, 2020.

A food-secure Philippines
with prosperous farmers and fisherfolk

Masaganang ANI Mataas na KITA

Republic of the Philippines
OFFICE OF THE SECRETARY
Elliptical Road, Diliman
1100 Quezon City

We hope that with this effort from CRAO, we will support your plan to include climate risk and vulnerability in the CIP manual to make it climate-smart, and fulfill the mandate under MC No. 4 (Series 2020) to mainstream CRVA as a standard assessment and targeting tool in preparing DA plans and programs.

We shall keep you informed on the progress of this CRAO undertaking.

Thank you.

cc: Secretary William D. Dar, Ph. D
Engr. Ariel T. Cayanan, Undersecretary for Operations
Mr. Rodolfo V. Vicerra, Undersecretary for Policy & Planning
Ms. Cheryl Marie Natividad-Caballero, Undersecretary and Chief-of-Staff
Mr. Shandy M. Hubilla, PRDP OIC National Deputy Project Director

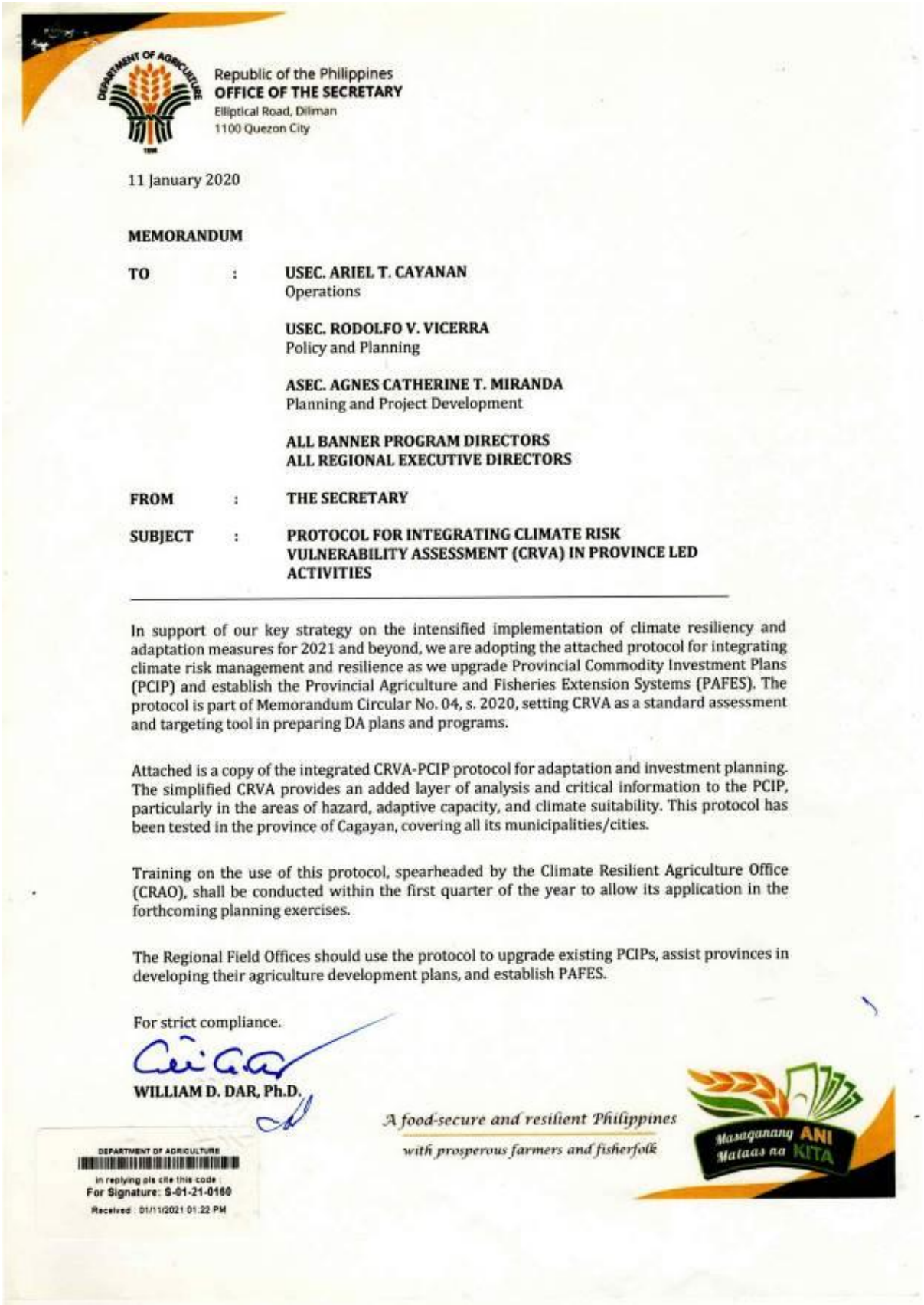
Attachments:

1. Letter Response of Assistant Sec. A.C. T. Miranda, dated Sept.14, 2020
2. CRAO letter to PRDP Updating Team dated Sept. 09, 2020
3. V2 –Climate and Hazard risk Assessment in the CIP, 27 Aug 2020
4. Climate and Hazard Assessment in the CIP (ppt)

A food-secure Philippines
with prosperous farmers and fisherfolk

Masaganang ANI Mataas na KITA

Annex 3: Protocol for Integrating Climate Risk Vulnerability Assessment (CRVA) in Province Led Activities



Republic of the Philippines
OFFICE OF THE SECRETARY
Elliptical Road, Diliman
1100 Quezon City

11 January 2020

MEMORANDUM

TO : **USEC. ARIEL T. CAYANAN**
Operations

USEC. RODOLFO V. VICERRA
Policy and Planning

ASEC. AGNES CATHERINE T. MIRANDA
Planning and Project Development

ALL BANNER PROGRAM DIRECTORS
ALL REGIONAL EXECUTIVE DIRECTORS

FROM : **THE SECRETARY**

SUBJECT : **PROTOCOL FOR INTEGRATING CLIMATE RISK VULNERABILITY ASSESSMENT (CRVA) IN PROVINCE LED ACTIVITIES**

In support of our key strategy on the intensified implementation of climate resiliency and adaptation measures for 2021 and beyond, we are adopting the attached protocol for integrating climate risk management and resilience as we upgrade Provincial Commodity Investment Plans (PCIP) and establish the Provincial Agriculture and Fisheries Extension Systems (PAFES). The protocol is part of Memorandum Circular No. 04, s. 2020, setting CRVA as a standard assessment and targeting tool in preparing DA plans and programs.

Attached is a copy of the integrated CRVA-PCIP protocol for adaptation and investment planning. The simplified CRVA provides an added layer of analysis and critical information to the PCIP, particularly in the areas of hazard, adaptive capacity, and climate suitability. This protocol has been tested in the province of Cagayan, covering all its municipalities/cities.

Training on the use of this protocol, spearheaded by the Climate Resilient Agriculture Office (CRAO), shall be conducted within the first quarter of the year to allow its application in the forthcoming planning exercises.

The Regional Field Offices should use the protocol to upgrade existing PCIPs, assist provinces in developing their agriculture development plans, and establish PAFES.

For strict compliance.

WILLIAM D. DAR, Ph.D.

DEPARTMENT OF AGRICULTURE
In replying pls cite this code :
For Signature: S-01-21-0160
Received : 01/11/2021 01:22 PM

A food-secure and resilient Philippines
with prosperous farmers and fisherfolk

Masaganang ANI Mataas na KITA

Annex 4: Letter from DA Secretary Emmanuel Piñol

Republic of the Philippines
Department of Agriculture
OFFICE OF THE SECRETARY
Elliptical Road, Diliman 1100
Quezon City, Philippines

30 January 2019

DR. MATTHEW MORELL
Director General
International Rice Research Institute
Los Baños, Laguna

Dear Dr. Morell:

Greetings from the Department of Agriculture!

As you are aware, the Philippine government will soon implement a Rice Tariffication Act which will create a Rice Competitiveness Enhancement Fund (RCEF). We are now in the process of mapping out the operational guidelines of the RCEF, the seed component of which is led by DA-PhilRice. Being a strong partner of the Philippines, we need the technical assistance of IRRI in this initiative.

In this regard, please allow **Dr. Leocadio S. Sebastian** to help us, in his convenient time, in planning and implementing the RCEF by DA-PhilRice. Dr. Sebastian is the former Executive Director of PhilRice and has been heavily involved in the Philippine national rice program. Similarly, he has extensive knowledge and exposure in various successful rice-related and climate change adaptation projects in other Southeast Asian countries like Vietnam. His expertise would surely be of great help in transforming the Philippine rice industry to be more robust and competitive under a tariff regime.

Thank you and we look forward to your kind approval of our request.

Very truly yours,

EMMANUEL F. PIÑOL
Secretary

cc: Dr. Leocadio S. Sebastian
Dr. Sailila E. Abdula

Annex 5: Letter of Dr. Bruce Campbell to DA Secretary William Dar

International Center for Tropical Agriculture (CIAT)
c/o University of Copenhagen
Department Plant and Environmental Sciences
Thorvaldsensvej 40
DK-1871 Frederiksberg C.
Denmark
Phone +45 30 510 137

CGIAR Research Program on
Climate Change, Agriculture and Food Security (CCAFS)

www.ccafs.cgiar.org

19 August 2019

DR. WILLIAM D. DAR
Secretary
Department of Agriculture
Republic of the Philippines
Quezon City, MM, The Philippines

Dear Willy,

Congratulations on your appointment as the new Secretary of Agriculture of the Philippines. I'm delighted to note that you are bringing your vast experience in agriculture to benefit the Filipino farmers. Certainly, with your leadership, this is an opportunity to bring many of our research outputs to some outcome and impact in the Philippines (Science with a human face).

I support your tapping Leo to help in the review and implementation of the Philippines' Rice Competitive Enhancement Fund (RCEF) and rice sector development plan. I believe that this is strategic input that will allow CCAFS to help make the Philippine rice sector competitive, profitable for farmers and climate-smart. Leo can also brief you on what our partners (IRRI, CIAT, IFPRI, CIP, IIRR, SEARCA, PFRB, PhilRice) have been working on with DA AMIA on climate-smart agriculture in recent years. I hope you will find their outputs useful inputs as you review and plan future Philippine agriculture investments. He can also brief you of our work in helping the rice farmers in the Mekong River Delta climate-smart that have significant implication to the rice supply in the Philippines.

I will let Leo arrange his schedule and provide the requested support. I hope that he will be able to provide significant inputs that can help you redirect Philippine agriculture. I also look forward to CCAFS providing more inputs if necessary.

Thank you very much.

Yours sincerely,

Dr. Bruce Campbell
Program Director

Annex 6: News article: Talks on PH rice-based innovation systems

Search

DEPARTMENT OF AGRICULTURE

Elliptical Road, Diliman, Quezon City
+63 (2) 8928-8741 to 64 and +63 (2) 8273-2474

(https://www.da.gov.ph)

A food-secure and resilient Philippines with prosperous farmers and fisherfolk

THE WAY FORWARD | Level Up Philippine Agriculture!

(https://www.facebook.com/dacentralphilippines/) (https://www.da.gov.ph/wp-admin/)

Home (https://www.da.gov.ph/) » News (https://www.da.gov.ph/category/news/) » Talks on PH rice-based innovation systems ongoing

Talks on PH rice-based innovation systems ongoing

Author: DA Communications Group | 5 December 2019

Secretary William Dar and the Department of Agriculture's team of experts and consultants met on December 4, 2019 to identify targets and develop plans for the future of the Philippine rice industry.

The group discussed measures on how to elevate the country's rice sufficiency level through various programs, including initiatives under the Rice Competitiveness Enhancement Fund (RCEF).

CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) Southeast Asia Regional Program Leader Dr. Leocadio Sebastian, who joined other experts in the meeting, said that the targets would dictate how rice lands will be used in the future.

The meeting centered on how to improve the rice sufficiency level and double the income of farmers in five years by maximizing the RCEF and mainstreaming climate change adaptation measures in DA programs at the regional and local government unit levels.

Secretary Dar said that he would like to not only mainstream but also to institutionalize the Adaptation and Mitigation Initiative in Agriculture (AMIA), which is a flagship program of the DA for climate adaptation and mitigation. The program is currently coordinated and managed by the department's Systems-Wide Climate Change Office (SWCCO).

According to the Food and Agriculture Organization of the United Nations, major challenges that affect the future of food and agriculture include 1) population growth, urbanization, and ageing, 2) increasing competition for natural resources and land degradation, and 3) natural disasters and climate change. ***### (Gumamela Celes Bejarin, DA-AFID)***

Annex 7: News article: DA preparing blueprints for rice industry overhaul

Daily Tribune (Philippines)

DA preparing blueprints for rice industry overhaul

DA will revamp programs including initiatives under the Rice Competitiveness Enhancement Fund (RCEF)

8 Dec 2019 By Maria Romero

@Tribunephl_mbr

The Department of Agriculture (DA) is currently beefing up plans to conduct a major revamp of the Philippine rice industry.

This was announced this week by Agriculture Secretary William Dar who said that the department's team of experts and consultants recently met to discuss measures on how to elevate the country's rice sufficiency level.

DEPARTMENT of Agriculture Secretary Dar said he wants to institutionalize the Adaptation and Mitigation In

Dar said they will revamp programs including initiatives under the Rice Competitiveness Enhancement Fund (RCEF). Agriculture and Food Security Southeast Asia Regional Program Leader Dr. Leocadio Sebastian joined other experts in the meeting. He said that the targets would dictate how rice lands will be used in the future. The meeting centered on how to improve the rice sufficiency level and double the income of farmers in five years by maximizing the RCEF.

It will also mainstream climate change adaptation measures in DA programs at the regional and local government unit levels.

Secretary Dar said he would like to not only mainstream but also to institutionalize the Adaptation and Mitigation Initiative in Agriculture (AMIA).

AMIA is a flagship program of the DA for climate adaptation and mitigation. The program is currently coordinated and managed by the department's Systems-Wide Climate Change Office.

According to the Food and Agriculture Organization of the United Nations, major challenges that affect the future of food and agriculture include population growth, urbanization, and ageing, increasing competition for natural resources and land degradation, and natural disasters and climate change.

utionalize the Adaptation and Mitigation Initiative in agriculture.

Annex 8: Invitation letter to the RCEF workshop

Republic of the Philippines
Department of Agriculture
OFFICE OF THE SECRETARY
Elliptical Road, Diliman
Quezon City, 1100 Philippines

31 October 2019

Dr. LEOCADIO SEBASTIAN
Regional Program Leader
Climate Change, Agriculture and Food Security
International Rice Research Institute
Los Baños, Laguna

Dear Dr. Sebastian:

Greetings!

The Rice Competitive Enhancement Fund (RCEF) Program will be holding a planning workshop on December 03-05, 2019 at the Philippine Rice Research Institute in Muñoz, Nueva Ecija. This planning workshop aims to integrate each component's operational plan and implementing guidelines for CY 2020-2024.

With this, may we invite you to attend the abovementioned planning workshop.

Please confirm you or your representative(s) name(s) on or before November 08, 2019 to Ms. Yca Palma or Ms. Vee Dayandayan, FOS Staff, thru (02) 926 8137 local 2420.

Very truly yours,

Engr. ROY M. ABAYA
The RCEF Program Coordinating Team Leader, and
DA FOS Director

"A food-secure Philippines with prosperous farmers and fisherfolk"

Masaganang ANI Mataas na KITA

Annex 9: Memorandum on implementation of a unified school-on-the-air program on smart rice agriculture

Republic of the Philippines
OFFICE OF THE SECRETARY
Elliptical Road, Diliman
1100 Quezon City

30 June 2020

MEMORANDUM

TO : All Regional Executive Directors
Asec. Andrew Villacorta
Dr. John de Leon
Dr. Santiago Obien
Dr. Romeo Recide
Mr. Julian Lapitan
Dr. Karen Barroga
Asec. Noel Reyes
Dr. Rosana Mula
Mr. Recher Ondap
Dr. Rex Navarro
Dr. Baldwin Jallorina
Dr. George Y. Culaste

CC : Undersecretaries/Asst. Secretaries/Heads of concerned Bureaus/ Attached Agencies/Corporations/RAFIS Heads/ Dr. Leo Sebastian/ Dr. Fermin Adriano/Dr. Frisco Malabanan

SUBJECT : **IMPLEMENTATION OF A UNIFIED SCHOOL-ON-THE-AIR PROGRAM ON SMART RICE AGRICULTURE (SOA-SRA)**

Along with our fervent wish to modernize Philippine agriculture to make it competitive, resilient to climate change, and ensure sustained food security for our people, we need to mobilize and share smart rice technologies with a critical mass of our farmers and local intermediaries. More immediately, we intend to maximize our rice production during the forthcoming dry season 2020-2021 to reduce our imports during the lean months.

In line with this, you are hereby mandated to develop and implement a unified School-on-the-Air program on Smart Rice Agriculture (SOA-SRA) starting before the onset of the dry season, 2020-2021. Hereunder are the broad guidelines:

1. **Strategic goal and objective.** The SOA-SRA shall help catalyze agriculture modernization through the massive and sustained education of smallholder farmers and local intermediaries on modern and innovative technologies and approaches on smart rice production. Specifically, it aims to share cutting edge technologies and innovative approaches to help maximize rice productivity in medium-and low-yield provinces through radio, amplifying the limited reach of agriculture extension workers.

2. **Overall approach.** The SOA-SRA shall be a continuing radio-based distance learning program for farmers and local intermediaries nationwide. It shall unify and integrate all existing SOA programs on rice and rice-based farming systems being conducted by the DA. The SOA programs shall be simultaneously conducted by RFOs with ATI and aired by DWDA, Philippine Broadcasting Service (PBS), Philippine Information Agency (PIA), and members of the Philippine Federation of Rural Broadcasters (PFRB). SOA broadcasters shall be provided with a syllabus containing ready-to-be-aired scripts in modular format, radio plugs, jingles, and

A food-secure Philippines
with prosperous farmers and fisherfolk

Masaganang Mataas na ANI KITA

canned interviews. The SOAs shall be aired 30 minutes three times a week (MWF) from 5:00 AM to 5:30 AM in all carrier stations.

3. **Content.** Subject matter content shall initially focus on the entire rice value chain featuring innovative approaches, and modern and climate-smart rice technologies with the PalayCheck system as the overall platform. This shall include contents on how to optimize farm yields by addressing location and season-specific constraints of the targeted provinces. Content shall be developed by partner agencies to be spearheaded by a core group from PhilRice, ATI, PhilMech, PFRB, SUCs, DOST-PAGASA, and IRRI.

4. **Coverage and reach.** The SOA-SRA shall be aired in all rice growing provinces, with enrolment focused on those with <4 t/ha. Peripheral listeners from neighboring provinces covered by the carrier stations shall also be considered. To be launched in October 2020, the program must reach 300,000 farmers by June 2022.

5. **Operational scheme.** A coalition of public-private partners shall be involved in implementing the SOA-SRP. At the national level, a Technical Working Group (NTWG) shall lead project implementation under the direct supervision of the Assistant Secretary for Operations and co-chaired by ATI Assistant Director and PhilRice Deputy Director for Development who shall also serve as Program Managers. Members shall be composed of the members of the Joint DA-IRRI Task Force, Head of DA Communication, Head of DA-AFIS, PFRB President, Head of PhilRice communication, Head of ATI-ISD, PhilMech representative, and PIA and PBS representatives. Other key DA staff (e.g., BAR and FOS) may be called to support the TWG, with ATI serving as the National Secretariat.

   The national TWG shall be mirrored at the regional level to be chaired by the RFO Regional Executive Director and co-chaired by the Regional Agriculture and Fisheries Information Officer and the ATI Regional Director. Members shall be representatives from PhilRice Branch Stations, PBS/PIA/PFRB /DOST-PAGASA regional offices, SUCs, and private sector (i.e., RAFC Chair) and farmers. Upon the issuance of this memo, the NTWG shall be activated and shall immediately meet to map out an operational plan for the SOA-SRP. This plan shall guide the RTWGs which shall also be activated upon the issuance of this memo. The NTWG shall submit regular progress reports to my office which shall also reflect those from the RTWGs.

   Core listeners/learners shall be enrolled rice farmers with public/private/CSO intermediaries, local policymakers, LGU officials and consumers as secondary listeners.

6. **Outcome assessment.** An external assessment of the emerging outcomes of the SOA-SRP shall be conducted by partner SUCs immediately after the harvest of the dry season crop in 2021. The results of the assessment shall be inputted to the planning of the next airing for the wet season rice crop in 2021 and subsequent SOAs.

A food-secure Philippines
with prosperous farmers and fisherfolk

Masaganang Mataas na ANI KITA

7. **Budget.** Funding for the first airing season of the SOA-SRA shall be charged to all existing rice extension programs of the DA, PhilRice, PhilMech, and ATI. Henceforth, a regular budget item for the SOA-SRP program shall be included in the extension component of the National Rice Program.

8. **Specific guidelines.** The specific guidelines of the SOA-SRP shall be provided in a manual of operations to be produced by IRRI-CCAFS SEA for distribution to all concerned agencies.

For immediate compliance.

WILLIAM D. DAR, Ph.D.
Secretary

DEPARTMENT OF AGRICULTURE
In replying pls cite this code :
For Signature: S-06-20-0605
Received : 06/30/2020 03:11 PM

A food-secure Philippines
with prosperous farmers and fisherfolk

Masaganang ANI Mataas na KITA

Annex10: News article: DA shares rice production technologies thru radio

GOVPH Home About Us Programs News Contact Us

DA Shares Rice Prod'n Technologies Thru Radio

Fri, 08/28/2020 - 10:03pm

Posted by: repost

In an effort to reach as many farmers as possible, amid the Covid-19 pandemic, the Department of Agriculture (DA) will harness the power of radio into a unified distance learning program on modern rice agriculture, dubbed as "Makabagong Pagsasaka sa Himpapawid."

On August 27, Agriculture Secretary William Dar received the "Manual of Operations of the School-on-the-Air on Smart Rice Agriculture (SOA-SRA)," that provides step-by-step process, concepts, strategies, and best practices in the conduct of educational radio programs.

The SOA-SRA targets to provide a learning program in provinces with average yields of less than four tons per hectare, initially serving 300,000 rice farmer-enrollees within two years.

"There is relevance in delivering the news, and not only to deliver news, but also to enhance the capabilities of farmers," Secretary Dar said.

The program — developed and facilitated by the joint task force on scaling rice technologies, composed of the DA and International Rice Research Institute (IRRI) — identified the urgency to mainstream also the Philippine-IRRI Collaborative Rice R4D Program (PICRP) outputs such as NextGen varieties, Rice Crop Manager (RCM), Philippine Rice Information System (PRiSM), and Pest Risk Identification and Management (PRIME), among others, to rice farmers. Research funds for these technologies were funded by DA, through the Bureau of Agricultural Research.

The Cagayan Valley Region served as the program's pilot area with over 10,000 enrollees.

The DA-Region Field Offices, in partnership with the Agricultural Training Institute (DA-ATI), Philippine Center for Postharvest Development and Mechanization (DA-PhilMech), Bureau of Plant Industry (DA-BPI), state universities and colleges (SUCs), and local radio networks, will jointly implement the initiative.

It will be simultaneously conducted in DA-owned and sponsored radio stations, Philippine Broadcasting Service (PBS) Radyo Pilipinas, Philippine Information Agency (PIA), community-based radio stations, and members of the Philippine Federation of Rural Broadcasters (PFRB).

The SOA-SRA will focus on learning programs on DA-IRRI cutting edge technologies, along with the PalayCheck system and broader context on climate change.

Participating radio stations and rural broadcasters will also be provided with radio plugs, canned interviews, and ready-to-be-aired scripts and CDs produced through a pilot radio campaign of the CGIAR Research Program on Climate Change, Agriculture and Food Security in Southeast Asia (CCAFS SEA) and PFRB project titled "Climate Change: I-Broadkas Mo".

In his message, Secretary Dar said that the SOA-SRA must be embraced as a family activity.

"Other members of the family must also participate in this learning process, so there will be an exchange of learning ideas among them," he said.

The SOA-SRA will be launched in September. ### (Kristel Merlo, DA-AFID)

In this article: Secretary William Dar
Department of Agriculture
Rice Production Technologies

Related content

- Call for Proposals
- ATI Accredited Extension Service Providers Distribute Plant Seedlings in their Respective Communities
- ATI Attends 27th AWGATE Meeting, Highlights "Green Technologies and SMEs Assistance
- Department of Agriculture: The Year in Review (2020 Year-end report)

ATI Today

Extension services continue to evolve. With the challenges that extension workers and farmers face, the Agricultural Training Institute (ATI) continues to explore various strategies to improve its efforts as the extension and training arm of the Department of Agriculture. In over 30 years, the ATI has celebrated various successes and learned from the lessons during hard times. Nonetheless, we are proud to be standing the test of time through the support of our partners and the clientele themselves. This is the ATI Today, more committed to bring you extension services beyond

The Philippine Transparency Seal of ATI

INSIDE #ATIINSPIRE

Bids and Jobs
ATI Network
Corporate Publications
Facilities
News from the Centers
Agri-Extension Blogs
Training Schedules

- Call for Proposals
- ATI Accredited Extension Service Providers Distribute Plant Seedlings in their Respective Communities
- ATI Attends 27th AWGATE Meeting, Highlights "Green Technologies and SMEs Assistance
- 2021 is International Year of Fruits and Vegetables

RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

CGIAR

CCAFS

CCAFS, led by the International Center for Tropical Agriculture (CIAT), brings together some of the world's best researchers in agricultural science, development research, climate science and Earth System science, to identify and address the most important interactions, synergies and tradeoffs between climate change, agriculture and food security. *www.ccafs.cgiar.org*.

CGIAR is a global agriculture research partnership for a food secure future. Its research is carried out by 15 CGIAR centers in close collaboration with hundreds of partner organizations. *www.cgiar.org*.

CCAFS in Southeast Asia is hosted by the International Rice Research Institute, a member of the CGIAR Consortium.

CCAFS SEA Regional Office
International Rice Research Institute Vietnam Office
Agricultural Genetics Institute
Km 2, Pham Van Dong Street, North Tu Liem District,
Hanoi, Vietnam

Photo by Georgina Smith, CIAT